



Docket No. 3951-4001

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): Jonathan Ellenberg, et. al.

Group Art Unit: 3624

Serial No.: 09/624,439

Examiner: FELTEN, Daniel S

Filed: July 24, 2000

For: SYSTEM AND METHOD FOR CONDUCTING A CUSTOMER AFFINITY  
PROGRAM AUCTION

**PETITION UNDER 37 C.F.R. § 1.47(a)**

Mail Stop Amendment  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

It is respectfully requested that the attached Declaration Of Jonathan Ellenberg  
And Josh Nabozny Under 37 C.F.R. § 1.131 (“the Rule 131 Declaration”) in above-identified  
patent application be accepted without the signature of Josh Nabozny, one of the two joint  
inventors of the subject matter of the application, pursuant to 37 C.F.R. § 1.47(a).

Inventor Nabozny does not respond to repeated requests for him to execute the Rule 131 Declaration, following diligent efforts to reach him and to request that he sign this document, as detailed in the accompanying Statement of Facts. Therefore, inventor Ellenberg is signing the Rule 131 Declaration on his own behalf and also on behalf of the non-signing

inventor Nabožny in accordance with 37 C.F.R. § 1.47(a) 01 FC:1463 70.00 DA 130.00 DP

This Petition is accompanied by the following:

0270172005 AWONDAF1 00000046 134500 09624439

02 FC:1462 270.00 DA 130.00 DP

(1) the Rule 131 Declaration executed by joint inventor Ellenberg on behalf of himself and also on behalf of the non-signing inventor Nabozny.

(2) a Statement of Facts, signed by Mark J. Abate, Esq. of Morgan & Finnegan, which accompanies this Petition and provides facts in support of the need of the inventor Ellenberg to sign the Rule 131 Declaration for this application on behalf of himself and non-signing inventor Nabozny, after diligent effort in accordance with 37 C.F.R.. § 1.47(a);

(3) a check for \$130.00 for the requisite fee accompanying the petition under 37 C.F.R. § 1.47(a).

(4) a petition pursuant to 37 C.F.R. § 1.13(a) for a one month extension of time to effect timely filing of the response to the September 23, 2003, Office Action;

(5) a check for \$120.00 (for the one-month extension of time); and

(6) a Response To The September 23, 2004 Office Action.

The most current address known for the non-signing inventor is stated in the Statement of Facts and is as follows:

Josh Nabozny  
15 Kingswood Way  
Manalapan, NJ 07726

**AUTHORIZATION**

The Commissioner is hereby authorized to charge any additional fee(s) which may be required for this Petition under 37 C.F.R. § 1.47(a), and accompanying papers, or to credit any overpayment, to Deposit Account No. 13-4500, Order No. 3951-4001.

Respectfully submitted,  
MORGAN & FINNEGAN, L.L.P.

Dated: January 24, 2005

By:



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Mark J. Abate  
Registration No. 32,527

**Correspondence Address:**

MORGAN & FINNEGAN, L.L.P.  
3 World Financial Center  
New York, NY 10281-2101  
(212) 415-8700 Telephone  
(212) 415-8701 Facsimile



Docket No. 3951-4001

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): Jonathan Ellenberg, et al.

Group Art 3624

Serial No.: 09/624,439

Examiner: Felten, Daniel S

Filed: July 24, 2000

For: SYSTEM AND METHOD FOR CONDUCTING A CUSTOMER AFFINITY PROGRAM AUCTION

**STATEMENT OF FACTS IN SUPPORT OF PETITION UNDER 37 C.F.R. § 1.47(a)**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Mark J. Abate, hereby declare as follows:

1. I am an attorney admitted to the bars of New York, New Jersey and the U.S. Patent and Trademark Office (registration no. 32,527) and a partner of the firm of Morgan & Finnegan, L.L.P. ("Morgan & Finnegan"), 3 World Financial Center, New York, New York 10281-2101. I make this Statement Of Facts In Support Of The Petition Under 37 C.F.R. § 1.47(a) in the above-referenced application. Morgan & Finnegan has been retained by Merrill Lynch & Co., Inc. to prosecute and handle all matters relating to the above-referenced patent application in the U.S. Patent and Trademark Office. At Morgan & Finnegan, I am responsible for the handling and prosecution of the above-referenced patent application.

2. I am making this declaration on behalf of Merrill Lynch & Co., Inc., at which the invention of the above-referenced patent application was made and to whom the above-identified patent application is assigned, as to the exact facts which are relied upon to establish the diligent effort made to secure the execution of the Declaration Of Jonathan Ellenberg And Josh Nabozny Under 37 C.F.R. § 1.131 by the non-signing joint inventor, Josh Nabozny.

3. I have first-hand knowledge of the facts stated herein.

**STATEMENT OF CURRENT ADDRESS**

4. Josh Nabozny last known residence address is 15 Kingswood Way, Manalapan, New Jersey 07726.

**DETAILS OF OMITTED INVENTOR**

5. The inventors of above-identified patent application are Jonathan Ellenberg and Josh Nabozny. The application was filed on July 24, 2000. A Declaration and an Assignment to Merrill Lynch & Co., Inc., both executed by Jonathan Ellenberg and Josh Nabozny, have been filed in the application. Exhs. 1 and 2.

6. After executing the Declaration and the Assignment, Josh Nabozny left the employ of Merrill Lynch & Co., Inc.

7. Pursuant to 35 U.S.C. § 1.131 and 37 C.F.R. § 1.47(a), inventor Jonathan Ellenberg executed the enclosed Declaration Of Jonathan Ellenberg And Josh Nabozny Under 37 C.F.R. § 1.131 (“the Rule 131 Declaration”) on behalf of himself and on behalf of non-signing joint inventor Josh Nabozny, who does not respond to my repeated attempts to contact him and to request that he sign the Rule 131 Declaration. As is set forth below, Morgan & Finnegan, on behalf of Merrill Lynch & Co., Inc., has acted diligently and in good faith in making a *bona fide* attempt to request that inventor Josh Nabozny execute the Rule 131 Declaration.

8. On December 15, 2004, I personally called telephone directory assistance to ask for the telephone number of Josh Nabozny at his last known address of 15 Kingswood Way, Manalapan, New Jersey. I was told by the operator that “at the customer’s request the number is not published.”

9. On December 15, 2004, I also personally conducted searches on the internet, using the search engines Google and Yahoo, for Josh Nabozny, but could not identify any listings corresponding to the co-inventor of the above-identified application.

10. On December 15, 2004, I also asked our law firm's librarian to try to locate Josh Nabozny. Our librarian conducted a search on LEXIS, in the public records database. The LEXIS search uncovered a phone number as of September 9, 2003 of (732) 937-6110 for Josh Nabozny. I called that number and a message that "at the customer's request, the number as been disconnected" was played.

11. On December 15, 2004, I personally contacted the legal department of Merrill Lynch & Co., Inc. for any information concerning the whereabouts of Josh Nabozny. I was informed that contact information for former employees is not maintained by Merrill Lynch & Co., Inc. and that Merrill Lynch & Co., Inc. had no contact information for Josh Nabozny. I also asked Jonathan Ellenberg if he had contact information for Josh Nabozny. Jonathan Ellenberg informed me that he had no contact information for Josh Nabozny.

12. On December 15, 2004, I also personally sent a letter to Josh Nabozny at his last known address of 15 Kingswood Way, Manalapan, New Jersey 07726. The letter was sent certified mail and a return receipt was requested. A copy of this letter and the certified mail receipt is attached. Exh. 3. In the letter, I asked that he contact me regarding the above-referenced patent application. I never received the return postcard, nor did I receive a response to my letter.

13. On January 6, 2005, I asked my secretary, Jacqueline Marchione, to investigate the delivery or non-delivery of my December 15, 2004 letter to Josh Nabozny. She determined, from the postal service database, that the letter was unclaimed. Attached are printouts from that database showing that the letter was unclaimed. Exhs. 4 and 5.

14. On January 24, 2005, my letter of December 15, 2004 to Josh Nabozny was returned unopened as unclaimed. Exh. 6.

15. I remain without any information as to the location of Josh Nabozny and I have no way of contacting him.

16. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine, or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Dated: January 24, 2005

By:

  
Mark J. Abate  
Registration No. 32,527

**COMBINED DECLARATION AND POWER OF ATTORNEY FOR  
ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL  
DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART APPLICATION**

As a below name inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**A SYSTEM AND METHOD FOR CONDUCTING A CUSTOMER AFFINITY PROGRAM AUCTION**

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the specification of which

- a. [X] is attached hereto
- b. [ ] was filed on \_\_\_\_\_ as application Serial No. \_\_\_\_\_ and was amended on \_\_\_\_\_.  
\_\_\_\_\_  
(if applicable).

**PCT FILED APPLICATION ENTERING NATIONAL STAGE**

- c. [ ] was described and claimed in International Application No. \_\_\_\_\_ filed on \_\_\_\_\_ and as amended on \_\_\_\_\_. (if any).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

I hereby specify the following as the correspondence address to which all communications about this application are to be directed:

SEND CORRESPONDENCE TO: MORGAN & FINNEGAN, L.L.P  
345 Park Avenue  
New York, N.Y. 10154

DIRECT TELEPHONE CALLS TO: Mark J. Abate  
(212) 758-4800

[ ] I hereby claim foreign priority benefits under Title 35, United States Code § 119(a)-(d) or under § 365(b) of any foreign application(s) for patent or inventor's certificate or under § 365(a) of any PCT international application(s) designating at least one country other than the U.S. listed below and also have identified below such foreign application(s) for patent or inventor's certificate or such PCT international application(s) filed by me on the same subject matter having a filing date within twelve (12) months before that of the application on which priority is claimed:

[ ] The attached 35 U.S.C. § 119 claim for priority for the application(s) listed below forms a part of this declaration.

<u>Country/PCT</u>	<u>Application Number</u>	<u>Date of filing (day, month, yr)</u>	<u>Date of Issue (day, month, yr)</u>	<u>Priority Claimed</u>
				[ ] YES [ ] NO
				[ ] YES [ ] NO
				[ ] YES [ ] NO

[ ] I hereby claim the benefit under 35 U.S.C. § 119(e) of any U.S. provisional application(s) listed below.

Provisional Application No.

Date of Filing (day, month, yr)

ADDITIONAL STATEMENTS FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-PART  
OR PCT INTERNATIONAL APPLICATION(S) (DESIGNATING THE U.S.)

I hereby claim the benefit under Title 35, United States Code § 120 of any United States application(s) or under § 365(c) of any PCT international application(s) designating the U.S. listed below.

US/PCT Application Serial No.	Filing Date	Status (patented, pending, abandoned)/ U.S. application no. assigned (For PCT)
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US/PCT Application Serial No.	Filing Date	Status (patented, pending, abandoned)/ U.S. application no. assigned (For PCT)
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[ ] In this continuation-in-part application, insofar as the subject matter of any of the claims of this application is not disclosed in the above listed prior United States or PCT international application(s) in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or Imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

I hereby appoint the following attorneys and/or agents with full power of substitution and revocation, to prosecute this application, to receive the patent, and to transact all business in the Patent and Trademark Office connected therewith: John A. Diaz (Reg. No. 19,550), John C. Vassil (Reg. No. 19,098), Alfred P. Ewert (Reg. No. 19,887),

David H. Pfeffer (Reg. No. 19,825), Harry C. Marcus (Reg. No. 22,390), Robert E. Paulson (Reg. No. 21,046), Stephen R. Smith (Reg. No. 22,615), Kurt E. Richter (Reg. No. 24,052), J. Robert Dailey (Reg. No. 27,434), Eugene Moroz (Reg. No. 25,237), John F. Sweeney (Reg. No. 27,471), Arnold I. Rady (Reg. No. 26,601), Christopher A. Hughes (Reg. No. 26,914), William S. Feiler (Reg. No. 26,728), Joseph A. Calvaruso (Reg. No. 28,287), James W. Gould (Reg. No. 28,859), Richard C. Komson (Reg. No. 27,913), Israel Blum (Reg. No. 26,710), Bartholomew Verdirame (Reg. No. 28,483), Maria C.H. Lin (reg. No. 29,323), Joseph A. DeGirolamo (Reg. No. 28,595), Michael P. Dougherty (Reg. No. 32,730), Seth J. Atlas (Reg. No. 32,454), Andrew M. Riddles (Reg. No. 31,657), Bruce D. DeRenzi (Reg. No. 33,676), Michael M. Murray (Reg. No. 32,537), Mark J. Abate (Reg. No. 32,527), Alfred L. Haffner, Jr. (Reg. No. 18,919), Harold Haidt (Reg. No. 17,509), John T. Gallagher (Reg. No. 35,516), Steven F. Meyer (Reg. No. 35,613), Kenneth H. Sonnenfeld (Reg. No. 33,285), Tony V. Pezzano (Reg. No. 38,271), Andrea L. Wayda (Reg. No. 43,979) and Walter G. Hanchuk Reg. No. (35,179) of Morgan & Finnegan, L.L.P. whose address is: 345 Park Avenue, New York, New York, 10154; and Michael S. Marcus (Reg. No. 31,727) and John E. Hoel (Reg. No. 26,279) of Morgan & Finnegan, L.L.P., whose address is 1775 Eye Street, Suite 400, Washington, D.C. 20006.

[X] I hereby authorize the U.S. attorneys and/or agents named hereinabove to accept and follow instructions from Patrick Romain, Esq. as to any action to be taken in the U.S. Patent and Trademark Office regarding this application without direct communication between the U.S. attorneys and/or agents and me. In the event of a change in the person(s) from whom instructions may be taken I will so notify the U.S. attorneys and/or agents hereinabove.

Full name of sole or first inventor Jonathan Ellenberg

Inventor's signature\* J. Ellenberg

7/12/00  
date

Residence 23 Murphy Drive, Bridgewater, NJ 08807

Citizenship USA

Post Office Address 23 Murphy Drive, Bridgewater, NJ 08807

Full name of second joint inventor, if any Josh Nabozny

Inventor's signature\* Joshua Nabozny

7/12/00  
date

Residence 15 Kingswood Way, Manalapan, NJ 07726

Citizenship USA

Post Office Address 15 Kingswood Way, Manalapan, NJ 07726

[ ] ATTACHED IS/ARE ADDED PAGE(S) TO COMBINED DECLARATION AND POWER OF ATTORNEY FORM FOR SIGNATURE BY FOURTH AND SUBSEQUENT INVENTORS

\* Before signing this declaration, each person signing must:

1. Review the declaration and verify the correctness of all information therein; and
2. Review the specification and the claims, including any amendments made to the claims.

After the declaration is signed, the specification and claims are not to be altered.

To the inventor(s):

The following are cited in or pertinent to the declaration attached to the accompanying application:

**Title 37, Code of Federal Regulation, § 1.56**

Duty to disclose information material to patentability.

(a) A patent by its very nature is affect with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in patent was cited by the Office or submitted to the Office in the manner prescribed by §§1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) prior art cited in search reports of a foreign patent office in a counterpart application, and
- (2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

**Title 35, U.S. Code § 101**

Inventions patentable

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Title 35 U.S. Code § 102

Conditions for patentability; novelty and loss of right to patent

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent,

(b) the invention was patented or described in a printed publication in this or foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States, or

(c) he has abandoned the invention, or

(d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States, or

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent, or

(f) he did not himself invent the subject matter sought to be patented, or

(g) before the applicant's invention thereof the invention was made in this country by another had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other ...

Title 35, U.S. Code § 103

Conditions for patentability; non-obvious subject matter

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Title 35, U.S. Code § 112 (in part)

Specification

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms also enable any person skilled in the art to which it pertains, or with which it is mostly nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Title 35, U.S. Code § 119

Benefit of earlier filing date in foreign country; right of priority

An application for patent for an invention filed in this country by any person who has, or whose legal representatives or assigns have, previously regularly filed an application for a patent for the same invention in a foreign country which affords similar privileges in the case of applications filed in the United States or to citizens of the United States, shall have the same effect as the same application would have if filed in this country on the date on which the application for patent for the same invention was first filed in such foreign country, if the application in this country is filed within twelve months from the earliest date on which such foreign application was filed; but no patent shall be granted on any application for patent for an invention which had been patented or described in a printed publication in any country more than one year before the date of the actual filing of the application in this country, or which had been in public use or on sale in this country more than one year prior to such filing.

Title 35, U.S. Code § 120

Benefit or earlier filing date in the United States

An application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in an application previously filed in the United States, or as provided by section 363 of this title, which is filed by an inventor or inventors named in the previously filed application shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application or an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application.

Please read carefully before signing the \_\_\_\_\_ attached to the accompanying Application.

If you have any questions, please contact Morgan & Finnegan, L.L.P.

FORM:COMB-DEC.NY

Rev. 1/00

2

PATENT

Docket No. 3951-4001

ASSIGNMENT OF APPLICATION FOR PATENT

WHEREAS:

Jonathan ELLENBERG, 23 Murphy Drive, Bridgewater, NJ 08807, USA

Josh NABOZNY, 15 Kingswood Way, Manalapan, NJ 07726, USA

(full name(s) and post office address(s) of inventor(s) (including country))

(hereinafter referred to as ASSIGNOR(S)), has made a discovery or invention entitled:

A SYSTEM AND METHOD FOR CONDUCTING A CUSTOMER AFFINITY PROGRAM AUCTION  
(title of discovery or invention)

[ ] for which application for Letters Patent of the United States has been executed on even date herewith,  
 for which application for Letters Patent of the United States has been filed on \_\_\_\_\_, under Serial No.  
\_\_\_\_\_, and

WHEREAS:

Merrill Lynch & Co., Inc., 4 World Financial Center, New York, NY 10080 USA  
(name and address of assignee)

(hereinafter referred to as ASSIGNEE), is desirous of acquiring the entire interest in, to and under said invention and in, to and under Letters Patent or similar legal protection to be obtained therefor in the United States and in any and all foreign countries.

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN:

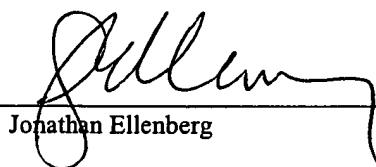
Be it known that in consideration of the payment by ASSIGNEE to ASSIGNOR(S) of the sum of one Dollar (\$1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration, ASSIGNOR(S) hereby sells, assigns and transfers to ASSIGNEE, its successors, legal representatives and assigns, the full and exclusive right, title and interest to said discovery or invention in the United States and its territorial possessions and in all foreign countries and to all Letters Patent or similar legal protection in the United States and its territorial possessions and in any and all foreign countries to be obtained for said invention by said application or any continuation, division, renewal, substitute or reissue thereof or any legal equivalent thereof in a foreign country for the full term or terms for which the same may be granted.

I, SAID ASSIGNOR(S), hereby authorize and request the Commissioner of Patents and Trademarks of the United States of America and any Official of any country or countries foreign to the United States of America whose duty it is to issue Letters Patent on applications as aforesaid, to issue all such Letters Patent for said discovery or invention to the ASSIGNEE, as assignee of the entire right, title and interest in, to and under the same, for the sole use and behalf of the ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

I, SAID, ASSIGNOR(S), hereby covenant that I have full right to convey the entire right, title and interest herein sold, assigned, transferred and set over;

AND I, SAID ASSIGNOR(S) hereby further covenant and agree that the ASSIGNEE, its successors, legal representatives, or assigns, may apply for foreign Letters Patent on said discovery or invention and claim the benefits of the International Convention, and that I will, at any time, when called upon to do so by the ASSIGNEE, its successors, legal representatives, or assigns, communicate to the ASSIGNEE, its successors, legal representatives, or assigns, as the case may be, any facts known to me respecting said discovery or invention, and execute and deliver any and all lawful papers that may be necessary or desireable to perfect the title to the said discovery or invention, the said applications and the said Letters Patent in the ASSIGNEE, its successors, legal representatives and assigns, and that if reissues of the said Letters Patent or disclaimers relating thereto, or divisions, continuations, or refilings of the said applications, or any thereof, shall hereafter be desired by the ASSIGNEE, its successors, legal representatives, or assigns, I will, at any time, when called up to do so by the ASSIGNEE, its successors, legal representatives, or assigns sign all lawful papers, make all rightful oaths, execute and deliver all such disclaimers and all divisional, continuation and reissue applications so desired, and do all lawful acts requisite for the application for such reissues and the procuring thereof and for the filing of such disclaimers and such applications, and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for said invention or discover in all countries, and without further compensation but at the expense of the ASSIGNEE, its successors, legal representatives and assigns.

Assignor's signature:



Jonathan Ellenberg

Citizenship: USA

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal this 12 day of July, 2000.

STATE OF New Jersey )  
ss.:  
COUNTY OF Mercer )

On this 12 day of July, 2000 before me, the undersigned authority, personally appeared to me known and known to me to be the individual who is described in and who executed the foregoing Assignment, and who duly acknowledged to me that he executed the same as his own voluntary act and deed for the uses and purposed therein specified.

Christine Barowski  
Notary Public

**CHRISTINE BAROWSKI**  
**NOTARY PUBLIC OF NEW JERSEY**  
MY COMMISSION EXPIRES JAN. 30, 2004

Assignor's signature: Joshua Nabozny  
Josh Nabozny

Citizenship: USA

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal this 12 day of July,  
2000

STATE OF New Jersey )  
ss.:  
COUNTY OF Mercer )

On this 12 day of July, 2000 before me, the undersigned authority, personally appeared  
to me known and known to me to be the individual who is described in and who executed the foregoing Assignment,  
and who duly acknowledged to me that he executed the same as his own voluntary act and deed for the uses and  
purposes therein specified.

Christine Barowski  
Notary Public

**CHRISTINE BAROWSKI**  
**NOTARY PUBLIC OF NEW JERSEY**  
MY COMMISSION EXPIRES JAN. 30, 2004

FORM: ASSIGN. PAT  
Rev. 07/29/99

# Morgan & Finnegan, L.L.P.

DAVID H. PFEFFER  
 HARRY C. MARCUS  
 STEPHEN R. SMITH  
 KURT E. RICHTER  
 EUGENE MOROZ  
 JOHN F. SWEENEY<sup>†</sup>  
 ARNOLD I. RADY<sup>†</sup>  
 CHRISTOPHER A. HUGHES  
 WILLIAM S. FEILER<sup>†</sup>  
 JANET DORE  
 JOSEPH A. CALVARUSO  
 JAMES W. GOULD<sup>†</sup>  
 RICHARD C. KOMSON  
 ISRAEL BLUM  
 CHRISTOPHER K. HU  
 BARTHOLOMEW VERDIRAME  
 DICKERSON M. DOWNING  
 MARIA C.H. LIN  
 JOSEPH A. DEGIROLAMO  
 MICHAEL P. DOUGHERTY  
 SETH J. ATLAS  
 ANDREW M. RIDDLES

COUNSEL  
 JOHN C. VASSIL  
 J. ROBERT DAILEY  
 ROGER S. SMITH  
 JOSEPH C. REDMOND, JR.<sup>†</sup>  
 HERBERT BLECKER  
 GEORGE TACTICOS<sup>††</sup>

SENIOR COUNSEL  
 JEROME G. LEE  
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December 15, 2004

## By Certified Mail/Return Receipt Requested

Josh Nabozny  
 15 Kingswood Way  
 Manalapan, NJ 07726

Re: U.S. Patent Application No. 09/624,439  
**For System And Method For Conducting A Customer  
 Affinity Program Auction**  
 Our Ref: 3951-4001

Dear Josh:

Please call me at your earliest convenience to discuss the above-referenced patent application which was filed in your name while you were a Merrill-Lynch employee. Thank you.

Very truly yours,  


Mark J. Abate

MJA:jm

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Mark J. Abate

MJA:jm

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*Josh Nabozny (3951-4001)(NJH)  
15 Kingswood Way  
Manalapan, NJ 07726*

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**Abate, Mark J.**

**From:** Marchione, Jacqueline  
**Sent:** Thursday, January 06, 2005 3:31 PM  
**To:** Abate, Mark J.  
**Subject:** FW: USPS Shipment Info for 7003 2260 0003 5369 1474

FYI -- they will notify me up to 2 weeks if any changes.

-----Original Message-----

**From:** USPS\_Track\_&\_Confirm [mailto:[USPS\\_Track\\_Confirm@usps.com](mailto:USPS_Track_Confirm@usps.com)]  
**Sent:** Thursday, January 06, 2005 3:19 PM  
**To:** Marchione, Jacqueline  
**Subject:** USPS Shipment Info for 7003 2260 0003 5369 1474

This is a post-only message. Please do not respond.

Jacqueline Marchione has requested that you receive the current Track & Confirm information, as shown below.

Current Track & Confirm Info provided by the U.S. Postal Service, 01/06/05

Label Number: 7003 2260 0003 5369 1474

Service Type: Certified

Shipment Activity	Location	Date & Time
UNCLAIMED 12:39pm	ENGLISHTOWN NJ 07726	01/03/05
NOTICE LEFT 1:29pm	ENGLISHTOWN NJ 07726	12/18/04
ARRIVAL AT UNIT 8:20am	ENGLISHTOWN NJ 07726	12/18/04

USPS has not verified the validity of any email addresses submitted via its online Track & Confirm tool.

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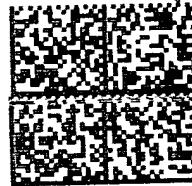
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Josh Nabozny

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Mark J. Aboek, Esq.  
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Docket No. 3951-4001

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): Jonathan Ellenberg, et. al.

Group Art Unit: 3624

Serial No.: 09/624,439

Examiner: FELTEN, Daniel S

Filed: July 24, 2000

For: SYSTEM AND METHOD FOR CONDUCTING A CUSTOMER AFFINITY  
PROGRAM AUCTION

**DECLARATION OF JONATHAN ELLENBERG  
AND JOSH NABOZNY UNDER 37 C.F.R. § 1.131**

Mail Stop  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This Declaration Under 37 C.F.R. § 1.131 is submitted in the above-identified application.

Jonathan Ellenberg and Josh Nabozny, being duly sworn, depose and say:

1. That we are co-inventors of the above-identified patent application.
2. That our records indicate that the invention of the above-identified patent application was conceived prior to June 23, 1999, as evidenced by the photocopies of the documents attached hereto as Exhibits A and B.
3. That every date on Exhibits A and B was earlier than June 23, 1999.

4. That Exhibits A and B disclose the concept of a system and method for conducting a customer affinity program auction as claimed in the above-identified patent application.

5. We began working on implementing the system and method for conducting a customer affinity program auction before June 23, 1999. The system and method was reduced to practice as shown in Exhibits G, H, I and J.

6. That at all times from when we began working on implementing the system and method for conducting a customer affinity program auction, prior to June 23, 1999, to the date when the system and method for conducting a customer affinity program auction was reduced to practice, we worked diligently on the implementation of the system and method for conducting a customer affinity program auction. Exhs. A-J show activities relating to the work on reducing the invention to practice. Some of the attached exhibits were prepared by employees of IBM. See, e.g., Exhs. C, D, E, G, I and J. The documents prepared by employees of IBM were prepared after our conception of the invention, reflected in Exhs. A and B, and the IBM employees who prepared those documents were working under our direction. In addition, Gilbert Gazzia, referenced in some of the attached exhibits, was an employee of Merrill Lynch & Co., Inc. working under the direction of Josh Nabozny. See, e.g., Exhs. G, H and I.

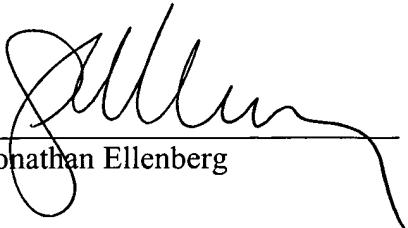
7. All of the work on the conception and reduction to practice of the invention was conducted in the United States.

8. We hereby further declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false

statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application of any patent issued thereon.

Date:

Jan 21, 2005

  
Jonathan Ellenberg

---

Josh Nabozny

Please respond to GGazzia@NJAOST.ML.com

To: Rhodes Rumsey/Atlanta/IBM@IBMUS  
cc:  
Subject: Merrill Lynch Auctions

Dusty,

I figured I needed to give you some additional information regarding auctions so that we can receive a proposal targeted to Merrill Lynch. We are currently speaking with uBid in reference to their auction engine. This is something Frank needs me to pursue ASAP.

- \* Merrill Lynch is looking to create an auction site using the Signature Reward Points - It will provide Visa Signature members the capability to redeem their Signature Reward Points for products offered for auction.
- \* If the Signature Rewards Auction is successful, Merrill Lynch would add a Regular Auction site.

IBM/OpenSite Technologies needs to:

- \* Modify its program to enable the use of Signature Reward Points
- \* Work with Merrill Lynch to come up with the initial architectural design for the site
- \* Implement the initial site
- \* Help Merrill Lynch set up and manage online auctions
- \* Provide training to Merrill Lynch on the online auction system
- \* Provide technical support during the engagement

Requirements:

IBM/OpenSite will license its Online Auction software to Merrill Lynch for use in the Signature Reward program. Winning bidders will be referred to Merrill Lynch's 1-800 number to finalize their transaction for the items purchased at auction. Merrill Lynch will be the party offering the inventory in the auction.

IBM/OpenSite will supply the resources for:

- \* Systems development, operation and maintenance
- \* Copies of the software required to operate the system
- \* Modification and support to change UI to specifications supplied by Merrill Lynch
- \* Merrill Lynch will determine the number of inventory items to be put

up for bid in any single auction and the minimum bid for such inventory in the auction.

Merrill Lynch will be responsible for and bear the costs of:

- \* Merchandising, including any governmental approvals, licenses or permits required in connection therewith.
- \* All content for the Merrill Lynch Signature Reward auction site, including: relevant information on the inventory offered; all disclosures and disclaimers required by law to offer the inventory (including any required statements that the inventory is not being offered to residents of particular jurisdictions); order fulfillment, including all arrangements for winning bidders to secure their inventory won at auction; and customer service.

#### Development Specifications

Merrill Lynch will provide the specifications for the systems development effort, including interface specifications. If IBM/OpenSite is unable to supply the resources to meet specified timelines, under IBM/OpenSite's direction, Merrill Lynch will provide the resources required to complete the project.

#### IBM/OpenSite Fees?

- \* Auction engine license fee
- \* Hourly rate for resources needed

#### Target Date for Pilot Launch

We would like to have the Merrill Lynch Signature Reward auction site operational within 90 days following the signing of a definitive agreement.

IBM/OpenSite and Merrill Lynch will determine the length of time needed to successfully carry out a pilot of the auction site. Once the pilot is complete a decision will be made on whether Merrill Lynch should have a permanent auction site.

## The Merrill Lynch/Auction Partnership

### **Business Strategy:**

Merrill Lynch is interested in partnering with an auction management firm in order to promote Merrill Lynch products and a more active use of the MLOL site. Three options for partnership would be possible:

1. Merrill Lynch would partner with an on-line auction Internet site that would run auctions on behalf of Merrill Lynch.
2. Merrill Lynch would purchase auction software and incorporate the software into ML OnLine, taking responsibility for running auctions.
3. Merrill Lynch would purchase auction software that would run at an alternate site and contract with an auction management firm to run the auction offsite.

Although Merrill Lynch prefers the first option, the other two would be considered viable under limited circumstances.

### **Audience for the Auctions:**

Since Merrill Lynch would like to sponsor different types of auctions for various purposes, a method for targeting the auction audience is necessary. In any case, however, these auctions would be offered to Merrill Lynch clients exclusively. However, under some conditions the target audience would be expanded or contracted based on the purpose of the auction.

We need the capability to keep our client's anonymous to other users of the auction site.

### **Types of Auctions:**

The full range of auctions would be needed. This means that for each auction, Merrill Lynch would want the ability to determine which type of auction to hold from the following well-known auction types:

Traditional  
Traditional with Agent  
Descending or Dutch  
Wall Street

**Silent  
Straight Sale  
Fire Sale**

**Settlement:**

The auction manager would be responsible for determining the winner of the auction and communicating this information to Merrill Lynch. Upon that communication, Merrill Lynch would be responsible for the actual settlement of the purchase. This would be done using the standard methods of settlement that take place for auctions today. The only potential deviation from this is the possibility of settling in Merrill Lynch dollars, CMA Visa Signature Rewards points, or other pseudo-money forms of payment to be determined.

**Scheduling and Notification of Auctions:**

It would be expected that the auction management system would have the facility to schedule and notify the different target audiences of when a particular auction is taking place and what's being put up for auction.

**Product Selection:**

Products, services or events being offered for auction can come from Merrill Lynch, a Merrill Lynch e-commerce partner or from the auction management firm.

## PROPOSED FUNCTIONALITY

<b>Rules</b>	<ol style="list-style-type: none"> <li>1. Each auction has a pre-determined start and end date based on the seller discretion.</li> <li>2. Auctions normally last 1 – 7 days.</li> <li>3. Auction bidding can be done 24 hours a day, 7 days a week.</li> <li>4. Prices are final and it is up to the seller and winning bidder to complete the sale.</li> <li>5. All bids are done online with registered participants.</li> <li>6. Sellers cannot bid in their own auction.</li> </ol>
<b>Bidding</b>	<ol style="list-style-type: none"> <li>1. Traditional - This is the standard bidding process, where a product goes up for auction at a starting price.</li> <li>2. Traditional with Agent - These are traditional auctions with the added feature that you can use an intelligent Agent to place bids on your behalf.</li> <li>3. Descending or Dutch - Products start at a set price, and at regular time intervals, the price decreases by a set amount.</li> <li>4. Wall Street - Like the stock market, the selling price of a product in this bidding process is based on demand.</li> <li>5. Silent - Here, unlike the other bidding methods, you have no clue what your competitors are offering for a particular product.</li> <li>6. Straight Sale - Products are offered at a set price, and sell on a first-come, first-served basis, until the supply is exhausted.</li> <li>7. FireSale - This auction is very similar to a straight sale. However, every time someone bids, the sale price moves slightly higher by the amount posted under Price Increase Per Bid.</li> </ol>
<b>Selling</b>	<ol style="list-style-type: none"> <li>1. Seller fee, when applicable, will be waived to encourage usage of the site.</li> </ol>
<b>Email</b>	<ol style="list-style-type: none"> <li>1. Confirm of bid</li> <li>2. Daily status of involved auctions</li> <li>3. Outbid notification when maximum bid is reached</li> <li>4. End of auction notification</li> <li>5. Wining bid notification to seller and buyer</li> </ol>
<b>Payment/Credit</b>	<ol style="list-style-type: none"> <li>1. Can be facilitated between ML accounts.</li> <li>2. CMA Visa Signature, WCMA or EMA Premium Visa card purchases would be eligible for additional Signature Rewards points.</li> <li>3. Purchases made with Signature Rewards points would be deducted from client's total balance.</li> </ol>

Merrill Lynch  
Signature Website  
Auction Engine Recommendations

Merrill Lynch has asked for a high level analysis of the best solution for offering auctioning functionality on their current Signature VISA website. An original analysis explored the use of OpenSite technology, the same engine used to build Ebay, as well as several other popular web auctioning sites. Using OpenSite would require designing and building the auction functionality into the existing site, testing it, and migrating it to the production server hosted by IBM.

Also explored in this recommendation is IBM's Net.Commerce technology which includes Auction functionality.

# **REQUIREMENTS**

The initial requirements for the auction functionality, provided by Merrill Lynch, are as follows:

## **Business Strategy:**

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- Merrill Lynch would partner with an on-line auction Internet site that would run auctions on behalf of Merrill Lynch.
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### PROPOSED FUNCTIONALITY

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Selling	Seller fee, when applicable, will be waived to encourage usage of the site.
Email	<ul style="list-style-type: none"><li>• Confirm of bid</li><li>• Daily status of involved auctions</li><li>• Outbid notification when maximum bid is reached</li><li>• End of auction notification</li><li>• Wining bid notification to seller and buyer</li></ul>
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## Solution Overviews

### COMPARISON

	<b>OpenSite</b>	<b>Net.Commerce</b>	<b>Existing Auction Site</b>
<b>SuperBowl Promotion deadline</b>	Could be built, with minimal graphic treatment, sans testing, in time to auction the tickets	Could not be built in time to auction the tickets	Could be ready for auctioning
<b>Set up effort</b>	100 hr effort to install and set up development environment	800 hr effort minimum to set up development environment	Unknown
<b>Development effort</b>	Tbd	tbd	Tbd
<b>Features</b>	Highest feature set vs. cost	High feature set, but includes many other e-commerce functions not necessary for Signature	Tbd
<b>Initial Costs</b>	Software/Licensing: \$30,000 approx	Software/Licensing: \$60,000/\$10,000 approx	Lowest Cost
<b>Compatibility</b>	Compatible with current site, could be installed to existing server	Does not run on Internet Information Server – would require a separate hosting environment from the Signature site	Not applicable
<b>Scalability</b>	Yes	Yes	Tbd
<b>Upgrade?</b>	Yes	Yes	Tbd
<b>Administration Tool</b>	Yes	No	Not applicable
<b>Merchant posted offerings</b>	Yes	No	Tbd
<b>Handles Points for currency</b>	Tbd	Tbd	Tbd
<b>Types of auctions</b>	All	Tbd	Tbd
<b>Settlement</b>	Tbd	Tbd	Tbd
<b>Scheduling/Notification</b>	Tbd	Tbd	Tbd

### SUMMARY:

The possibility of creating an Auction in time for a Super Bowl ticket offering is best accomplished through an existing auction site on a “lease” for the single offering. There are many questions surrounding points and handling Merrill account info through a third party auction site adequately in such a short timeframe.

Over time, this “lease” option would not be the proper solution.

Using OpenSite, a simplified auction function could be built within the existing site framework in time for the promotion, but without, in our estimation, proper testing.

Net.Commerce provides the most robust functionality, but much of it is extraneous to Merrill’s needs. Net.Commerce would take the longest development time and hourly effort to complete.

## D

## Analysis of Auction Technology Alternatives for the Merrill Lynch Signature Mall Site

### **Summary**

After a thorough survey of product features and various development considerations of both Opensite and the Net.Commerce auction package, it has been determined that OpenSite is the most appropriate technology for implementing an auction feature for the Merrill Lynch Online site. OpenSite more closely matches the requirements articulated by the client and provides the best chances for successful implementation within Merrill Lynch's very challenging schedule goals.

### **Overview**

Merrill Lynch would like to add an auction feature to the CMA Visa Signature Rewards Mall site. This site enables Signature Visa card holders to redeem points earned in the Signature Rewards program for various premiums, including merchandise, gift certificates, and travel benefits. The auction feature would allow card holders to bid Signature program points for special promotional items.

The auction feature is intended to provide card holders with a fun and exciting alternative for point redemption, as well as to promote growth in site traffic and increase enrollment in the Signature Card program.

Merrill Lynch has discussed implementing auction functionality in the following ways:

1. Partnering with an outside auction site that would run auctions on their behalf
2. Incorporating auction functionality directly within their existing Merrill Lynch Online infrastructure and administering it themselves
3. Developing auction functionality as an outside resource and contracting with an auction management company to administer the auctions

### **Feature Requirements**

Required auction features and specifications were communicated to IBM through the attached document "The Merrill Lynch/Auction Partnership". Additional background information and indications of future plans for the auction site have been provided in two on-site meetings and numerous telephone conversations. During one of the on-site meetings, several Merrill Lynch executives were presented with a demonstration of IBM's Net.Commerce auction product to which they responded very favorably.

Requirements and considerations for the auction site are summarized below:

#### **Time to Completion:**

One of the most important considerations for the implementation of the auction functionality is the relatively tight deadline for completing the work.

Originally, Merrill Lynch indicated that they would like to have the auction functionality completed in time to auction tickets for the Super Bowl, which takes place . The client has since

indicated that they understand this goal may not be realistic and have relaxed the deadline somewhat. However, they would like to have a serviceable auction site by the end of January 1999.

**Auction Types:**

Support for a wide range of traditional auction formats, including:

- Traditional
- Traditional with agent
- Descending or Dutch
- Wall Street
- Silent
- Straight Sale
- Fire Sale

**Settlement:**

The seller and the winning bidder will finalize all transactions. The auction site will not be required to settle transactions, so no provisions for transaction processing need to be made.

Certain purchases made with CMA Signature Visa cards would be eligible for Signature program point bonuses. These additional points will need to be added to the clients' point balance. Purchases made with Signature program points would need to be deducted from clients' point balances. In the short term, these modifications to Signature point balances would be made using the facilities and procedures currently in place. In the future, this process might be more tightly integrated with the auction feature to make the point balance adjustments immediately and automatically.

**Currency:**

Because Merrill Lynch plans to support transactions in both Signature program points and dollars, the auction site must support offering items in either currency unit on an item-by-item basis.

**Scheduling and Notification of Auctions:**

The auction site must have facilities for showcasing the items that are to be auctioned and an appropriate system for displaying an auction schedule.

Auctions will normally last 1-7 days.

Bids will be accepted 24 hours a day, 7 days a week.

**Registration:**

Bids are accepted from registered bidders only, so the auction system will have to include provisions for participant registration.

**Offering Sources:**

Items to be auctioned can be offered by Merrill Lynch, a Merrill Lynch e-commerce partner, or by the auction management firm, if applicable.

**E-Mail:**

The auction solution would use e-mail to fulfill the following functions:

- Confirmation of bid
- Daily status of involved auctions
- Outbid notification when maximum bid is reached
- End of auction notification
- Winning bid notification to seller and buyer

***Business Approach***

IBM recommends that Merrill Lynch build auction technology into the Merrill Lynch Online site and manage the auctions itself. This approach is not only more economical for Merrill Lynch, it also gives Merrill Lynch far greater flexibility and control in expanding and changing the auction feature to better fit its evolving business needs. IBM's recommendations and proposal are based on the assumption that Merrill Lynch will

## ***Auction Technologies Considered***

IBM Interactive Media considered two products for Merrill Lynch's online auction needs:

- Net.Auction – A new component in IBM's Net.Commerce product family, this product adds full-featured auction functionality to Net.Commerce sites.
- OpenSite – OpenSite is a leading Internet auction development package used by dozens of sites to provide auction capabilities.

### **Comparitive Analysis**

#### **Cost**

OpenSite licenses are available at three configuration levels with widely varying price points:

Opensite Professional: \$5,000/license  
Opensite Merchant: \$15,000/license  
OpenSite Corporate: \$50,000/license

Opensite Merchant includes all of the technical capabilities required for successful implementation of the Merrill Lynch auction goals, as well as some additional features that may be useful to Merrill Lynch in the future. Two licenses would be required for the project (one for the development and testing server and one for the production server), and each license requires purchase of a mandatory maintenance and support agreement for an additional \$3,000. The total cost of OpenSite software licenses would be \$36,000. OpenSite is available in versions that run on Windows NT Server 4.0 and are compatible with Microsoft IIS 4.0 server software. This means OpenSite could be run on the test and production servers already in place for the Merrill Lynch Signature project.

Net.Commerce's auction package requires Net.Commerce. Net.Commerce licenses are available in two configurations:

Net.Commerce Start: \$5,000/processor  
Net.Commerce: \$20,000/processor

The Net.Commerce Start package would be sufficient to handle the Net.Auction requirements. Two licenses of Net.Commerce would also be required. The auction package is currently available on a 60-day trial basis at no charge. Final pricing by the Net.Commerce business organization is pending.

The total cost of software licenses cannot be calculated until final pricing for the auction component is available. However, the two Net.Commerce Start licenses total to \$10,000.

Also, although a Windows NT Server version of Net.Commerce is available, it is unclear whether Net.Commerce is compatible with Microsoft IIS 4.0. The published documentation for Net.Commerce indicates that it is compatible with Lotus Go and Netscape Enterprise Server, and the auction component documentation indicates that it is compatible with Lotus Go. Neither the published Net.Commerce documentation nor the Net.Commerce personnel that were contacted could verify that Net.Commerce and

the auction component were compatible with Microsoft IIS 4.0. If either Net.Commerce or the auction component cannot be run on the existing Merrill Lynch test and production servers, then additional servers will be required. This will, of course, mean additional setup and hosting charges.

#### Development Schedule

One of the most important factors in the selection of an auction technology is the projected term of the development cycle. The deadline is extraordinarily tight and the fastest path to a functioning auction site must be taken.

Internal IBM Interactive Media “rule-of-thumb” estimates for setting up even a simple Net.Commerce solution range from 600-700 hours, including 80-100 hours for properly setting up servers and installing and configuring Net.Commerce. In addition, it is likely that the Net.Commerce auction solution would require some weeks of custom development (see other items below). Being a new product, there may also be some unexpected technical difficulties and delays (see Product Maturity below).

On the other hand, the development cycle for implementing an OpenSite solution is supposed to be much shorter. Very basic implementations have reportedly been completed in several days, longer development cycles being used chiefly to further customize graphics, text and other interface elements.

Given the rather modest cosmetic requirements for the initial release of the Merrill Lynch auction site, it is likely that a functioning auction system could be successfully implemented much more quickly using OpenSite rather than the Net.Commerce auction feature.

#### Product Maturity

The Net.Commerce auction feature is a relatively new product, and although a great deal of time has doubtlessly been spent testing and improving it, it has not been employed for any appreciable time in an actual production environment.

OpenSite is a relatively mature product that is currently employed in dozens of active auction sites.

There are inherent risks in using any new software product. Product stability, feature sets, and usability improve as the product matures. Sometimes required product features or other business considerations outweigh the risks of using a new product. However, in this case the Net.Commerce auction technology does not appear to have any significant advantages over OpenSite in meeting Merrill Lynch's stated objectives for the project.

#### Server Considerations

As mentioned earlier, it is possible that the Net.Commerce auction feature is incompatible with the existing Signature server configuration. If this is the case, an additional test server and production server would have to be set up.

This would not only mean additional expense, but also possible delays. Lead times for server setup, especially custom setup, can be lengthy, and software configuration and testing can sometimes be problematic and time-consuming.

#### Features

In addition to the issues covered above, there are several product feature issues that bear consideration:

- E-Mail

The client requirements for the project specifically mention several applications for e-mail. The client would like for the auction server to use e-mail to keep both customers and administrators aware of the status of several auction parameters.

The Net.Commerce auction feature does not currently support programmatic outbound e-mail of any kind. Net.Commerce expects registered users to log on to the server in order to check status. A development contact with Net.Commerce indicated that several weeks of custom development time would be required to integrate the desired e-mail functionality. The contact suggested that an API could be developed in a much shorter period to enable developers to implement their own e-mail functionality, but this would also involve a considerable custom development effort.

- **Transaction Processing**

Because the Net.Commerce auction component is simply an add-on feature to Net.Commerce, it supports a complete set of transaction processing functions, including credit card processing and integration with back-end systems.

OpenSite provides no real means of handling transaction processing, being almost exclusively a cost negotiation tool. Should provisions for transaction processing be required later, a separate solution will have to be implemented.

There is no immediate requirement for transaction processing for the Merrill Lynch auction project, and because most transactions will be finalized between either the Carlson fulfillment center or the individual affiliate merchants, it seems unlikely that this functionality will be required in the future. If there had been a foreseeable need for transaction processing, this would probably have been a major determining factor in the selection of an auction technology.

- **Offerer Account Support**

There is no "built-in" functionality within the Net.Commerce auction feature to support submission and acceptance of auction items by registered providers. Submission of auction items would have to take place via other means, such as e-mailing or phoning the auction administrator.

Opensite's Merchant level product has direct support for the submission and acceptance of items for auction. Although not listed as a written requirement, this feature would probably be convenient for Merrill Lynch as they begin to allow their affiliates to provide items for auction.

- **Support for Both Dollars and Points**

The Merrill Lynch auction offering will have to support sales in dollars or Signature Rewards program points on an item-by-item basis.

Neither product has built-in support for this requirement.

In OpenSite, it is possible to remove all currency indicators from the price fields and use one of the customizable variables as a field label for the currency field.

A contact at Net.Commerce has indicated that direct support of this requirement would take as much as a week of custom development.

# **Appendix B – Auction System**

## *Introduction*

Merrill Lynch would like to add an auction feature to the CMA Visa Signature Rewards Mall site. This site enables Signature Visa card holders to redeem points earned in the Signature Rewards program for various premiums, including merchandise, gift certificates, and travel benefits. The auction feature would allow card holders to bid Signature program points for special promotional items.

The auction feature is intended to provide card holders with a fun and exciting alternative for point redemption, as well as to promote growth in site traffic and increase enrollment in the Signature Card program.

IBM has contracted with Merrill Lynch to incorporate auction functionality into the existing Merrill Lynch Signature Visa Mall infrastructure by installing, configuring and customizing the OpenSite auction software on the Signature servers and modifying the Signature web pages to provide appropriate links to the auction pages.

## *Project Servers*

The auction system will be added to the current Signature Visa Mall test and production servers. These servers presently have enough storage capacity to hold the program files and are capable of servicing the additional traffic likely to be generated by the auction feature, at least for the near future.

OpenSite, the auction software that has been selected for the implementation of the auction feature, is available for the servers' current operating system and web server software configuration. There are no known incompatibilities between OpenSite and any software currently operating on the test and production servers.

## *Auction Software & Licensing*

IBM has obtained two licenses of OpenSite Merchant software on Merrill Lynch's behalf with the accompanying mandatory upgrade and support agreements. The software licenses and support agreements will be transferred to Merrill Lynch following development and deployment of the auction feature.

One copy of OpenSite will be installed on the Signature Visa Mall Primary Hosting Server in Schaumburg, IL, the other will be installed on the Signature test server in Atlanta, GA. Following project deployment the test server will serve as a development and test bed, content and configuration data being uploaded to the production server when complete and tested.

## *Auction Administration and Site Upkeep*

Administration and upkeep of the auction feature requires regular, active human involvement. It is assumed that Merrill Lynch will designate one or more people to be the auction site administrators. These personnel will work with IBM to help configure OpenSite and related software and learn how to perform routine site management tasks. These Merrill Lynch personnel will ultimately assume responsibility for ongoing auction site maintenance and training of additional administrative staff as necessary.

## *Technical Solution by Feature Requirement*

Required auction features and specifications were communicated to IBM through the document "The Merrill Lynch/Auction Partnership". Additional background information and indications of future plans for the auction site have been provided in two on-site meetings and numerous telephone conversations.

Requirements and considerations for the auction site are summarized below, along with the proposed technical solutions for meeting the requirements:

### **Auction Types**

Merrill Lynch has requested support for a wide range of traditional auction formats. The OpenSite Merchant software allows for the customization of several price and bidding variables on an item-by-item basis. The setting of these variables can vary the auction parameters within certain limits. In the future, custom scripting and configuration can be used to provide specific auction functionality desired by Merrill Lynch.

### **Settlement**

The seller and the winning bidder will finalize all transactions. The auction site will not be required to settle transactions. Therefore, no provisions for transaction processing need to be made.

Certain purchases made with CMA Signature Visa cards will be eligible for Signature program point bonuses. These additional points will need to be added to the clients' point balance. Purchases made with Signature program points will need to be deducted from clients' point balances. In the short term, these modifications to Signature point balances will be made using the facilities and procedures currently in place. In the future, this process might be more tightly integrated with the auction feature to make the point balance adjustments immediately and automatically.

### **Currency**

Because Merrill Lynch plans to support transactions in both Signature program points and dollars, the auction site must support the offering of items in either currency unit on an item-by-item basis. OpenSite allows for the definition of custom variables that can be specified on an item-by-item basis. The standard currency label will be removed from the item price by modifying an OpenSite configuration file. A new custom data field will be defined and included on pages displaying product information that indicates the type of currency for which the item is offered.

### **Scheduling and Notification of Auctions**

The auction site must have facilities for showcasing the items that are to be auctioned and an appropriate system for displaying an auction schedule.

OpenSite's standard templates include a complete set of item listing and detail pages on which customers can review product information.

Auctions will normally last 1-7 days. Bids will be accepted 24 hours a day, 7 days a week.

OpenSite has full-featured, flexible auction scheduling tools. Auctions can be configured in advance and scheduled to start and end at discreet times.

Bids can be accepted at any time.

#### **Registration**

Bids will be accepted from registered bidders only. OpenSite allows bidders to register using a simple HTML form. Registration data is recorded to a database and is available for administrator reporting.

#### **Offering Sources**

Items to be auctioned can be offered by Merrill Lynch, a Merrill Lynch e-commerce partner, or by the auction management firm, if applicable.

The OpenSite Merchant software features a Sellers Module with which "seller" accounts can be established and maintained. Sellers can be granted permission to submit items for fixed price or auction sale.

#### **E-Mail**

The auction solution will use e-mail to fulfill the following functions:

- Confirmation of bid
- Daily status of involved auctions
- Outbid notification when maximum bid is reached
- End of auction notification
- Winning bid notification to seller and buyer

OpenSite's E-Auctioneer feature can be configured to automatically inform participants about auction activity via e-mail. E-mail is sent using a SMTP utility called "Blat!". The e-mail messages themselves can also be customized.

IBM will configure the E-Auctioneer feature according to Merrill Lynch specifications.

Additionally, OpenSite can be used to send e-mail to the site's registered bidders. Merrill Lynch's auction administrators can use this feature to produce mass e-mailings to auction participants.

## **Security**

#### **Client Protection**

OpenSite can be configured to employ SSL encryption and authentication to all transactions of private and sensitive information.

Because OpenSite will initially not perform any actual transaction settlement, it should not be directly involved in communicating any personal financial information. OpenSite will not initially access the Carlson point balance server and will not require or transfer any financial account numbers.

The only personal information recorded by OpenSite will be the bidder registration information requested on the registration form. This information will be protected by SSL

during submission. Once established, bidder accounts are accessed via encrypted cookies stored at the client.

#### **Server Security**

All of the OpenSite administrative pages are generated dynamically by CGI only after the auction administrator signs on with username, password, and unique OpenSite keycode.

#### **Database Security**

All auction and registration data is stored on the server in encrypted form.

## **ADD TASK 2.3.19 to IBM Responsibilities:**

### **2.3.19 Auction Functionality**

#### **Task Description:**

Design, Install and Test Auction Functionality into Signature Visa Rewards Web Application as per Merrill Lynch stated requirements: (See Appendix E 'Auction Software Recommendation' Section "Feature Requirements")

This task consists of the following subtasks:

1. Create Auction Detailed Technical Design Document
2. Create Auction Functionality Information Design
3. Program Auction Functionality using OpenSite software
4. Test Auction Functionality in Test Environment
5. Publish Auction Functionality to Production Server
6. Test Auction Functionality in Production Environment

#### **Completion Criteria:**

This task will be considered complete upon written approval of the Auction Portion of the Signature Visa Rewards Web Application by the Merrill Lynch Project Manager, per the approval process described in Appendix C. Approval Process for Project Deliverables.

#### **DELIVERABLES:**

The following items will be delivered to Merrill Lynch as a result of this task:

- Signature Auction Software Recommendation Document
- Signature Auction Functionality Detailed Technical Design Document
- Auction Portion of Signature Visa Rewards Web Application
- Signature Auction Test Report

## **TASK 2.3.19 Assumptions**

### **Technical Development Assumptions:**

#### **1. General Assumptions:**

- IBM will implement and configure features available within the OpenSite Merchant product. Custom feature development will not be performed under this Agreement.
- Merrill Lynch agrees to develop and keep available a suitable test environment, including any servers and software upon which the project is dependent.
- Merrill Lynch will perform security and other acceptance reviews in a timely manner and provide clear documentation of any problems and concerns they may have so they can be resolved quickly and effectively.
- The goal of the initial Implementation of the auction capabilities will be to quickly implement basic auction functionality that meets the customer requirements. Basic HTML template customizations will be considered satisfactory. No extensive graphic modifications or cosmetic scripting (such as rollovers, etc.) will be provided.

#### **2. Auction Types:**

Support for a wide range of traditional auction formats, including:

- Traditional

- Traditional with agent
- Descending or Dutch
- Wall Street
- Silent
- Straight Sale
- Fire Sale

**3. Settlement:**

The seller and the winning bidder will finalize all transactions. The auction site will not be required to settle transactions, so no provisions for transaction processing need to be made.

Certain purchases made with CMA Signature Visa cards would be eligible for Signature Program point bonuses. These additional points will need to be added to the clients' point balance. Purchases made with Signature Program points would need to be deducted from clients' point balances. In the short term, these modifications to Signature point balances would be made using the facilities and procedures currently in place. In the future, this process might be more tightly integrated with the auction feature to make the point balance adjustments immediately and automatically.

**1. Currency:**

Because Merrill Lynch plans to support transactions in both Signature Program points and dollars, the auction site must support offering items in either currency unit on an item-by-item basis.

**2. Scheduling and Notification of Auctions:**

The auction site must have facilities for showcasing the items that are to be auctioned and an appropriate system for displaying an auction schedule.

Auctions will normally last 1-7 days.

Bids will be accepted 24 hours a day, 7 days a week.

**3. Registration:**

Bids are accepted from registered bidders only, so the auction system will have to include provisions for participant registration.

**4. Offering Sources:**

Items to be auctioned can be offered by Merrill Lynch, a Merrill Lynch e-commerce partner, or by the auction management firm, if applicable.

**5. E-Mail:**

The auction solution would use e-mail to fulfill the following functions:

- Confirmation of bid
- Daily status of involved auctions
- Outbid notification when maximum bid is reached
- End of auction notification

Winning bid notification to seller and buyer

**Graphic and Creative Development Assumptions:**

1. All art elements will be derived from art previously created for the Signature Visa Rewards Web Application
2. Interfaces will be created from existing OpenSite templates
3. The look and feel of the auction functionality will follow the existing look and feel of the Signature Visa Rewards Web Application
4. The global navigational toolbar will not be modified

**Testing Assumptions:**

1. There will be a 1-week test period.

2. Test Scope

Auction Types:

Traditional  
Traditional with agent  
Descending or Dutch  
Wall Street  
Silent  
Straight Sale  
Fire Sale

Payment: Either credit card or Signature points

If using ML Visa, purchase will be eligible for Signature point bonuses

Registration

E-mail:

Bid confirmation  
Daily auction status  
Outbid notification when max bid is reached  
End of auction notification  
Scheduling and notification of auction

3. Testing will take place both on the test/staging server and on the production server

4. Target Platforms:

Operating System: Win '95

Browsers:

Netscape 3.x and 4.x  
Microsoft Internet Explorer 3.x and 4.x

Minimum Color Depth: 256 colors - 8 bit

Minimum Color Resolution: 640 x 480

5. Site Map, Functional Templates, and Design Documentation will be available at least 2 weeks before testing begins.
6. All development (including both creative and technical) will be complete before the start of the testing.
7. All code will have been Unit Tested and executed on the minimum browser platforms before the start of testing.
8. All content will have been reviewed and approved by the client, per the Approval Process described in Appendix C, before the start of testing.
9. All content will have been incorporated into the Web Site before the start of testing.
10. Testing will take place on a staging server (setup and provided by the development team) and the production server.
11. The staging/production server(s) must have all the requisite connectivity to backend data and processes.
12. Testing will be done Monday to Friday during normal business hours.
13. Merrill Lynch will provide a functioning test environment in conjunction with IBM and Carlson test environments.

#### Add To Section 2.5 Deliverable Materials

The following deliverables are defined as Type IIa:

- Signature Auction Software Recommendation Document

- Signature Auction Functionality Detailed Technical Design Document
- Auction Portion of Signature Visa Rewards Web Application
- Signature Auction Test Report

### ***Revise Appendix A Deliverable Guidelines***

**Add:**

#### **A.22 Signature Auction Software Recommendation Document**

**Purpose:** IBM will compare OpenSite and Net.Commerce software packages and make a recommendation based on Merrill Lynch's provided requirements for auction functionality.

**Content:** A 2-3-page report outlining IBM's recommendation.

#### **A.23 Signature Auction Functionality Detailed Technical Design Document**

**Purpose:** IBM will provide a Detailed Auction Technical Design Solution, which will incorporate information from the Merrill Lynch Requirements, the IBM Recommendation Document, and design sessions held with Merrill Lynch. This document will allow IBM and Merrill Lynch to reach an agreement on the visual, navigational and technical design requirements of the Merrill Lynch Signature VISA Mall Auction Functionality.

**Content:** The document will contain up to 20 pages consisting of the following, as appropriate:

- Creative Treatment - One high-level design study based on the templates available in OpenSite software.
- High Level Navigation and Branching Document depicting navigational flow. Functional Templates that define the general location and function of major screen elements for each screen defined within the Branching Document.
- Key Technical Infrastructure

#### **A.24 Auction Portion of Signature Visa Rewards Web Application**

**Purpose:** IBM will install the Auction Functionality in the Signature Visa Rewards Web Application.

**Content:** An accepted version of the Signature Visa Rewards Web Application Auction Functionality following Merrill Lynch Project Manager acceptance.

#### **A.25 Signature Auction Test Report**

**Purpose:** IBM will provide a Test Report to ensure a high quality final deliverable.

**Content:** The 3-5 page Final Test Report will summarize the quality assurance effort for the Project. It consists of the following as appropriate: a summary of the test results, problems found, problems remaining, and a risk assessment. This report will be made available within 4 weeks of declaring the Project completed.

To: GGazzia@NJAOST.ML.com@internet  
cc: Rhodes Rumsey/Atlanta/IBM@IBMUS  
From: Paul Mozingo/ATLANTA/Contr/IBM @ IBMUS  
Subject: Auction URL

Hey Gilbert,

We have a bare bones auction site up and running on our test server. You can reach at this URL:

<http://webtest2.interactive.ihost.com/osauction.stm>

There are some issues about the site that we need to discuss and a few wrinkles to iron out, but you can now at least poke around at the basic functionality. We have not changed any of the templates or graphics yet, so what you will see is just the default "look and feel" that you get in a standard install.

There were a few issues that came up during the install, mainly related to conflicts between the structure of the existing site and the structure that the OpenSite software requires. We were able to get around most of these by making changes to the OpenSite configuration files.

However, there is one issue without a really easy solution. Right now, the entire site (pages, graphics, CGI) is SSL protected. This is not really common practice. Usually SSL is employed only for such things as forms in which clients will enter private data or reports from the server with sensitive information.

The OpenSite software is not designed to operate in an environment in which every resource is SSL protected. There are links in as many as 250 templates that reference other files with "http" rather than "https". In order to protect everything, all of these links would have to be updated. If there are updated, there will, of course, be a maintenance issue in that they will have to continue to be updated and tested for every upgrade of the software.

For right now, we have set the SSL properties on the OpenSite resources to the settings for which they are designed. Please note that this does not affect any of the existing Signature content.

If this is acceptable to your security department, then everything is OK. We can continue to protect all of the Signature content and only those resources related to OpenSite that require protection (the registration form and possibly the bid form).

If the entire auction site must be SSL protected, we will have to update all the "http" links to "https". As mentioned earlier, this will create a bit of an ongoing maintenance burden.

If your security people have a problem with mixing the fully-protected Signature site with a mixed-protection auction site, we can move the auction site to its own virtual domain on the server. We will simply have to obtain additional certificates to cover the auction site.

Play around with the site. Let us know what you think. Please note that there are a few links that don't work properly because of the configuration of the site (most notably, the "Home" button).

There will have to be a certain amount of hand-tooling done to make the auction site fit in with our existing structure.

We should probably put together a conference call to discuss some of the many options available in the configuration of the site.

Also, if you send your mailing address, I will send you one of the User Manuals so you can begin to familiarize yourself with the Administrator documentation.

Thank You,

Paul Mozingo

tel: 770-835-6091  
fax: 770-835-7249  
vdmoizng.us.ibm.com  
3200 Windy Hill Rd., WG06A  
Atlanta, GA 30339



H

On [REDACTED], There was a conference call, with IBM (Paul Mozingo and Dusty), Gilbert Gazzia and myself to address some initial security issues raised by IBM for what is being referred to as the ECommerce Auction site. During the call I raised several issues which were going to be researched by IBM. IBM was to get back to me with solutions and answers. This was to occur by the end of this week. I have not heard from them as of this afternoon.

**Paul Mozingo**

\*\*\*\*\*

To: GGazzia@NJAOST.ML.com@internet  
cc: Rhodes Rumsey/Atlanta/IBM@IBMUS  
From: Paul Mozingo/ATLANTA/Contr/IBM @ IBMUS  
Subject: Auction Security

Gilbert:

Dusty said he didn't get this, so I am sending it again. I had a draft saved on my computer. I don't know if I sent this along with the information from Alex or not.

We have been researching some alternatives for addressing the auction site authentication issues. We understand the security issues involved. Just as before, Merrill Lynch does not want personal account information stored on our server. And from a usability standpoint, it is preferable that there is no additional "Log In" process.

The OpenSite support center tells us that the red fields on the registration form are hard-coded in the software to be required. We can't simply turn them off or remove them.

However, we can call the CGI that this form normally calls and submit the required information behind the scenes. This would allow us to enter meaningless information in most of the required fields just to keep the software running properly. This is the most economical solution, requiring only 30-40 additional development hours.

The NT version of OpenSite is also capable of using Oracle for its database. It might be possible (but probably very time consuming and expensive) for Merrill Lynch to set up an oracle database under their control that could be accessed remotely by the OpenSite software to fully integrate OpenSite functions with the Merrill Lynch customer databases. This would also require a special version of OpenSite intended for Oracle integration.

Finally, we could dig quite a bit deeper into the inner workings of OpenSite, recoding and customizing it to exactly meet our needs. Obviously this would require a much more intensive effort on our part and quite a bit of support from OpenSite's development staff. We would have to expend a significant effort just to properly investigate and size this option.

There are a few of the OpenSite "required" fields for which we would have to store meaningful information.

Name Field: The CMA number could be used in the "Name" field as an identifier for the user. This can be retrieved using the existing authentication structure.

Handle: A "handle" is required. This is the name by which the user will be known to others within the auction site. This will have to be provided by the user.

**Password:** An auction password is also required for certain functions, such as placing bids and checking account status. This will have to be provided by the user.

**Auction ID Number:** OpenSite automatically assigns each auction user a six digit ID number that must be entered to perform bids and other auction functions.

We are proposing using a custom registration form that will supplement the standard Signature site authentication to provide only the required information for the OpenSite software to perform properly. This form should need to collect only a "handle" and "password" and should only have to be filled out once by each user.

Our understanding is that casual browsing of the auction site will require no authentication. We are proposing that when a user wishes to perform any function requiring auction registration that they be authenticated according to the following scheme:

**Not Logged Into Signature**

    Not a Registered Auction User - Goes first to existing log-in screen, then to auction registration form

    Already a Registered Auction User - Goes first to existing log-in screen, then to desired page

**Already Logged Into Signature**

    Not a Registered Auction User - Goes to auction registration form

    Already a Registered Auction User - Goes straight to desired page

Once a user has registered, they use their six-digit auction ID number and password to perform auction functions, such as bidding. If OpenSite's "User Passport" feature is enabled, cookies are used to prevent the user from having to enter the auction ID number and password more than once per browser session.

We realize that Security may take issue with the storage of the auction ID and password on the server and that Merrill Lynch may consider it to be inconvenient for the user to have to remember and enter their auction ID number and password each auction session. However, the use of the auction ID and password is very integral to the functionality of OpenSite. Changing this would involve changing much of the inner workings of OpenSite itself.

The information required by the software under the proposed solution is as follows:

**CMA ID**

Handle - an arbitrary name used to publicly identify the user in auctions

Auction ID Number - the actual account identifier for auction purposes

Auction Password - provided by the user and used to access auction functionality only

End-



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# **Technical Design for Merrill Lynch Auctions (Redesigned) – Draft Only**

Revised:

Prepared for:

**Merrill Lynch  
500 College Road East  
Princeton, NJ 08540**

Prepared by:

**IBM E-Business Services  
3200 Windy Hill Road  
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This document is confidential and is intended for use by Merrill Lynch.

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# **Introduction**

## **Overview**

Merrill Lynch Auctions is a site which enables Signature and Premium Visa card holders to redeem points earned in the Signature Rewards and Premium Rewards program for various premiums, including merchandise, gift certificates, and travel benefits. The auction feature allows card holders to bid Signature and Premium program points for special promotional items.

The auction feature provides card holders with a fun and exciting alternative for point redemption, as well as is intended to promote growth in site traffic and increase enrollment in the Signature and Premium Rewards Card programs.

IBM contracted with Merrill Lynch to incorporate auction functionality into the existing Merrill Lynch infrastructure.

## ***Project Servers***

The auction system resides on the server specified by Merrill Lynch. This server presently has enough storage capacity to hold the program files and is capable of servicing the additional traffic likely to be generated by the auction feature, at least for the near future.

OpenSite, the auction software that has been selected for the implementation of the auction feature, is available for the servers' current operating system and web server software configuration. There are no known incompatibilities between OpenSite and any software currently operating on the test and production servers.

## ***Auction Software & Licensing***

IBM has obtained two licenses of OpenSite Merchant software on Merrill Lynch's behalf with the accompanying mandatory upgrade and support agreements. The software licenses and support agreements were transferred to Merrill Lynch during development and deployment of the auction feature, per Merrill Lynch's request.

One copy of OpenSite was installed on the primary hosting server in Schaumburg, IL, the other was installed on the IBM test server in Atlanta, GA. Following project deployment the test server now serves as a development and test bed, content and configuration data being uploaded to the production server when complete and tested.

## ***Auction Administration and Site Upkeep***

Administration and upkeep of the auction feature requires regular, active human involvement. As a part of the original assumptions, Merrill Lynch designated one or more people to be auction site administrators. These personnel are responsible for working with IBM to help configure OpenSite and related software and capable of performing routine site management tasks. These Merrill Lynch personnel ultimately assume responsibility for ongoing auction site maintenance and training of additional administrative staff as necessary.

## ***Technical Solution by Feature Requirement***

Required auction features and specifications were communicated to IBM through the document "The Merrill Lynch/Auction Partnership". Additional background information and indications of future plans for the auction site have been provided in two on-site meetings and numerous telephone conversations.

Requirements and considerations used for the auction site are summarized below, along with the final technical solutions:

### **Auction Types**

Merrill Lynch has requested support for a wide range of traditional auction formats. The OpenSite Merchant software allows for the customization of several price and bidding variables on an item-by-item basis. The setting of these variables can vary the auction parameters within certain limits. In the future, custom scripting and configuration can be used to provide specific auction functionality desired by Merrill Lynch.

### **Settlement**

The seller and the winning bidder will finalize all transactions. The auction site will not be required to settle transactions. Therefore, no provisions for transaction processing need to be made.

Certain purchases made with CMA Signature Visa cards is eligible for Signature program point bonuses. These additional points will need to be added to the clients' point balance. Purchases made with Signature program points will need to be deducted from clients' point balances. In the short term, these modifications to Signature point balances is made using the facilities and procedures currently in place. In the future, this process might be more tightly integrated with the auction feature to make the point balance adjustments immediately and automatically.

### **Currency**

Because Merrill Lynch plans to support transactions in both Signature program points and dollars, the auction site must support the offering of items in either currency unit on an item-by-item basis. OpenSite allows for the definition of custom variables that can be specified on an item-by-item basis. The standard currency label is removed from the item price by modifying an OpenSite configuration file. A new custom data field is defined and included on pages displaying product information that indicates the type of currency for which the item is offered.

### **Scheduling and Notification of Auctions**

The auction site must have facilities for showcasing the items that are to be auctioned and an appropriate system for displaying an auction schedule.

OpenSite's standard templates include a complete set of item listing and detail pages on which customers can review product information.

Auctions will normally last 1-7 days. Bids is accepted 24 hours a day, 7 days a week.

OpenSite has full-featured, flexible auction scheduling tools. Auctions can be configured in advance and scheduled to start and end at discreet times.

Bids can be accepted at any time.

### **Registration**

Bids is accepted from registered bidders only. OpenSite allows bidders to register using a simple HTML form. Registration data is recorded to a database and is available for administrator reporting.

### **Offering Sources**

Items to be auctioned can be offered by Merrill Lynch, a Merrill Lynch e-commerce partner, or by the auction management firm, if applicable.

The OpenSite Merchant software features a Sellers Module with which "seller" accounts can be established and maintained. Sellers can be granted permission to submit items for fixed price or auction sale.

### **E-Mail**

The auction solution will use e-mail to fulfill the following functions:

- Confirmation of bid
- Daily status of involved auctions
- Outbid notification when maximum bid is reached
- End of auction notification
- Winning bid notification to seller and buyer

OpenSite's E-Auctioneer feature can be configured to automatically inform participants about auction activity via e-mail. E-mail is sent using a SMTP utility called "Blat!". The e-mail messages themselves can also be customized.

IBM will configure the E-Auctioneer feature according to Merrill Lynch specifications.

Additionally, OpenSite can be used to send e-mail to the site's registered bidders. Merrill Lynch's auction administrators can use this feature to produce mass e-mailings to auction participants.

# ***Security***

## **Client Protection**

OpenSite can be configured to employ SSL encryption and authentication to all transactions of private and sensitive information.

Because OpenSite will initially not perform any actual transaction settlement, it should not be directly involved in communicating any personal financial information. OpenSite will not initially access the Carlson point balance server and will not require or transfer any financial account numbers.

The only personal information recorded by OpenSite is the bidder registration information requested on the registration form. This information is protected by SSL during submission. Once established, bidder accounts are accessed via encrypted cookies stored at the client.

## **Server Security**

All of the OpenSite administrative pages are generated dynamically by CGI only after the auction administrator signs on with username, password, and unique OpenSite keycode.

## **Database Security**

All auction and registration data is stored on the server in encrypted form.

# Technical Solution

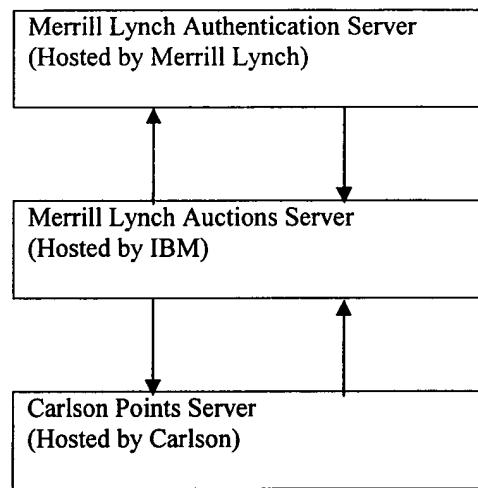
## Overall Structure

Merrill Lynch has a wide variety of online offers, which are currently being designed to encompass a new look and feel. Merrill Lynch Auctions is the first of these applications to launch. Instead of designing and coding an auction application IBM purchased OpenSite, an online auction application, to perform the auction piece of the project.

During the requirements gather process, IBM determined some priorities that needed to be addressed for this Web application to be successful. These are described below.

- Login to the auction must be invisible to the user. They would not be required to remember their handle and password.
- Users CMA ID must be kept encrypted on the server. This would also be the means by which the user bids are tracked and also how many points they have available to bid with.
- Users email must be kept encrypted on the server. This is not possible with the current auction database.

## High-Level Server Layout



## Merrill Lynch Authentication and Points Value Retrieval

IBM hosts the auction application. When a user tries to perform a function that requires Merrill Lynch authentication:

- The user is sent to the Merrill Lynch Authentication Server, which is hosted by Merrill Lynch. They are required to enter their MLOL ID and password here.
- IBM receives an encrypted token from Merrill Lynch.
- If the token is valid, it is decrypted with Merrill Lynch proprietary authentication code. If the token is not valid then the appropriate error message is displayed and none of the following bullet items are performed.
- The CMA ID is extracted.

- This CMA ID is sent to Carlson.
- If it is a valid CMA ID and is on file, Carlson will send the points amount back to IBM.
- If a valid points value is returned, IBM sets the appropriate cookies for the encrypted token and the points value to be used for later operations. If a valid point value is not returned, IBM displays the appropriate error message.

# Main CGI Programs

All CGI programs written by IBM for Merrill Lynch Auctions are written in Perl.

## Posting to OpenSite Executables

Four of the CGI programs post data to OpenSite executables (register.cgi, bid.cgi, your\_info.cgi and auction\_watch.cgi). The CGI programs have to ‘act’ like a browser. This is done through two modules:

- HTTP::Request::Common qw(POST)
- LWP::UserAgent

These programs open the appropriate sockets and handle the exchange with the WebServer. Complete documentation can be found for these modules at [www.perl.com](http://www.perl.com). Then go to CPAN (Comprehensive Perl Archive Network)

## Registration (/cgi-bin/os/register.cgi)

When a user wishes to register with the auction the following occurs:

- User clicks ‘Registration Center’
- os\_doorman.cgi determines if you are logged in with MLOL by checking the validity of the encrypted token
- If you are logged in with MLOL then os\_doorman.cgi sends you to /os/registration\_form.stm
- If you are not logged in with MLOL then os\_doorman.cgi sends the user to the Merrill Lynch authentication server. If the user is valid they are redirected to /os/registration\_form.stm

From /os/registration\_form.stm:

- The user enters a handle and their email address.
- This information is passed to register.cgi.

If they do not have a valid CMA ID:

- The user is directed to /os/auth\_error.html

If the user has a valid CMA ID:

- An eight digit password is generated for the user
- Credit-card field is set to the CMA ID
- A fake email address is generated, consisting of [user entered handle]@shopmerrill.com
- The fake email address is set up to forward to the real email address through IMAIL
- This new information, along with the information from the original post, is posted to OpenSite (addcust.exe)
- The return page is then passed back to the user.

## Bidding (/cgi-bin/os/bid.cgi)

When a user places a bid the following occurs:

If the user is not authenticated:

- The user is sent to authenticate through MLOL.

If the user card type is C, G, or B (Classic, Gold, or Basic):

- The user is sent to /os/login\_error.html page (because these card types do not have points)

If the CMA ID is blank (even though we have authenticated the user)

- The user is sent to /os/auth\_error.html

Otherwise the user is allowed to place the bid. The following actions occur:

- The customer handle and password are retrieved from OpenSite by CMA ID
- If the CMA ID is not in the OpenSite database the user is sent to /os/must\_register.html (end here)
- This information along with the submitted form information is posted to OpenSite (addbids.exe)
- The return page is passed back to the user

## Auction Watch (/cgi-bin/os/auction\_watch.cgi)

When a user wishes to watch an auction the following occurs:

If the user is not authenticated:

- The user is sent to authenticate through MLOL.

If the user card type is C, G, or B (Classic, Gold, or Basic):

- The user is sent to /os/login\_error.html page (because these card types do not have points)

If the CMA ID is blank (even though we have authenticated the user)

- The user is sent to /os/auth\_error.html

Otherwise the user is allowed to watch the auction. The following actions occur:

- The customer handle and password are retrieved from OpenSite by CMA ID
- If the CMA ID is not in the OpenSite database the user is sent to /os/must\_register.html (end here)
- This information along with the submitted form information is posted to OpenSite (auctwtc3.exe)
- The return page is passed back to the user

## Your Info (/cgi-bin/os/your\_info.cgi)

When a user chooses 'Your Info' the following occurs:

If the user is not authenticated:

- The user is sent to authenticate through MLOL.

If the user card type is C, G, or B (Classic, Gold, or Basic):

- The user is sent to /os/login\_error.html page (because these card types do not have points)

If the CMA ID is blank (even though we have authenticated the user)

- The user is sent to /os/auth\_error.html

Otherwise the user is allowed to watch the auction. The following actions occur:

- The customer handle and password are retrieved from OpenSite by CMA ID
- If the CMA ID is not in the OpenSite database the user is sent to /os/must\_register.html (end here)
- This information along with the submitted form information is posted to OpenSite (chkstat.exe)
- The return page is passed back to the user

# Other CGI Programs

The other CGI programs contain setup information and shared functions. They are written in Perl.

## /cgi-bin/setup.cgi

Defines

- \$SERVER\_NAME

Functions

- get\_location
- parseCookie
- cookie\_expire\_time
- print\_page
- show\_page
- header
- auth\_server

## /cgi-bin/setup\_auth.cgi

Functions

- get\_points
- decrypt\_token
- parse\_token
- parse\_points
- set\_points\_cookie
- set\_token\_cookie

- verify\_values
- check\_auth

/cgi-bin/os/os\_setup.cgi

Defines

- \$hostname
- \$dir\_root
- \$LOCATION\_INDEX
- \$AUTH\_SERVER
- \$AUTH\_CODE
- \$SERVER\_ROOT
- \$VERIFY\_VALUES
- \$POINTS\_CODE
- \$IMAIL
- \$KEY\_CODE

Functions

- customer\_list
- get\_customer

/cgi-bin/os/os\_setup\_auth.cgi

Defines

- %card\_type\_subroutines

Functions

- premium
- signature
- other\_card\_type

/cgi-bin/os/os\_doorman.cgi & /cgi-bin/os/os\_receive.cgi

These programs define no variables and contain no functions. os\_doorman.cgi controls access to areas of the site that require authentication. os\_receive.cgi is responsible for receiving the encrypted token from Merrill Lynch and for receiving the point value from Carlson.

## Server Configurations

### *Primary Hosting Server*

With the exception of the Log-In page, all of the Merrill Lynch Auctions content is hosted on a primary hosting server in Schaumburg, IL.

The specified server will adequately handle many times the projected traffic volume for quite some time.

For consistency with Merrill Lynch hosting platform standards, the server will run Microsoft Internet Information Server 4.0 on the Microsoft NT operating system.

Much of the site logic will depend upon CGI scripts written in PERL. Appropriate PERL taint checking is used to ensure that these functions are performed securely. PERL version 5.00502 is used. This is obtained from ActiveState Tool Corp.

Verasign SSL certificates will provide secure, 128-bit encrypted, authenticated communication between the primary hosting server and the Carlson and Merrill Lynch servers. The Primary Hosting server is configured to support only RC4 128-bit encryption with MD5 message authentication.

IBM Content Hosting provides a high level of physical security and a very comprehensive package of standard monitoring and server maintenance services.

Because the server-to-server connection between the Primary Hosting Server and the Carlson server is completely programmatic and will not involve an SSL-enabled browser, the script on the Primary Hosting Server will control its part of the SSL session with the Carlson server using a Java-based SSL tool included in the SSL Toolkit 3.0 package. This toolkit is developed and supported by the IBM Network Security Products Development Department (NGEA).

## ***Merrill Lynch Authentication Server***

The Merrill Lynch Authentication Server is configured as follows:

- Microsoft Windows NT 4.0 Operating Systems
- Microsoft Internet Information Server 4.0
- Verasign Server Certificate

The Merrill Lynch Server, located in Plainsboro, New Jersey, is dedicated to the authentication function. It hosts the Log-In page and will communicate with Merrill Lynch databases through production SP2 servers via the Merrill Lynch internal networking structure.

A Verasign server certificate will support 128-bit encryption for communications with the primary hosting server and with site visitors logging in. This certificate assures site visitors that they are communicating with a genuine Merrill Lynch server and protects the user names and passwords entered into the form hosted by Merrill Lynch.

This server is set up and maintained by Merrill Lynch.

## ***Carlson Server***

The Carlson Server, located in Minneapolis, Minnesota, is not necessarily be dedicated to Merrill Lynch application functions. It runs the Microsoft Windows NT operating system.

This server communicates with the primary hosting server via secure SSL transactions. This server is outfitted with a Verasign server certificate to ensure that point balance requests are sent only to the Carlson server and that the customer CMA IDs are properly protected.

The Carlson server employs an Active Server Page (ASP) script that analyzes the client certificate information during each https point balance request to verify that the request originated from the Primary Hosting Server. Carlson is responsible for preparing this script to Merrill Lynch specifications.

## Auction JavaScript Documentation

This documentation only covers scripts written by IBM developers or provided by Merrill Lynch (client). It does not cover scripts written by OpenSite. A brief description is given of each script and the functions they use.

### Registration Handle Validation

This script was written to prevent users from entering curse words as handles when registering. If the user enters a curse word with no leading blanks, they receive an alert box stating “The handle you entered is invalid. Please enter a valid handle.” If the handle field is left empty the user is prompted “You must enter a Handle”.

This script has two functions `isEmpty()` and `checkHandle()`.

```
<!--
function isEmpty(inputStr){
    if(inputStr == null || inputStr == ""){
        return true;
    }
    return false;
}

function checkHandle(form){

    var inputHandle = form.__chndl.value;
    var inputEmail = form.__cmail.value;

    inputHandle = inputHandle.toUpperCase();

    var
    checkString="cockfuckniggerjewbagdykekykegookshitcuntpussyassholebitchputzschnuckasswifeassspecke
rschlongpuntangsuckmikehuntharrydickblowjobhandjobsrotumballswankermuffhairpiecrackbutpooppoop
oosmegmacarpetmunchercarpetmuncherlesbianlesbosolutclitcocksuckeroralsexspankmasturbatejacko
ffwhoreanalbutholesluttynoiletcouchedouchebagbendoverjizzgizzspunkMicrosoftpeeppeecacakasackasucksuckers
uxvaginapenisrectumfornicatesodomymasochismsadismdildovibratortitboobbisexualhomosexualtesticlevul
vauterusclitorusfartfartknockerdickmunch";
    checkString = checkString.toUpperCase();

    if(isEmpty(inputHandle)){
        alert("You must enter a Handle!");
        return false;
    }
    else if(isEmptyinputEmail) ||inputEmail.indexOf("@") == -1{
        alert("You must enter a valid Email Address");
        return false;
    }
    else if(checkString.indexOf(inputHandle) != -1){
        alert("The handle you entered is invalid. Please re-enter a valid handle");
        return false;
    }
    else return true;
}
```

//-->

## Registration Handle Pop Up

This script launches a pop up window when the users clicks on the word Handle in “Pick a Handle” text on Registration form.

This script has two functions **launch()** and **launchRemote()**.

```
<script language="javascript">      function launch(newURL, newName, newFeatures, orgName) {  
    var remote = open(newURL, newName, newFeatures);  
    if (remote.opener == null)  
        remote.opener = window;  
    remote.opener.name = orgName;  
    return remote;  
}  
  
function launchRemote() {  
    myRemote = launch("index.html",  
        "myRemote",  
        "height=500,width=479,alwaysLowered=0,alwaysRaised=0,channelmode=0,dependent=0,directories=0,fullscreen=0,hotkeys=1,location=0,menubar=0,resizable=0,scrollbars=1,status=0,titlebar=1,toolbar=0,z-lock=0",  
        "infoWindow");  
}  
</script>
```

## Points Balance Check

This script prevents the user from bidding more than their available points total on an item. However, the user can bid less than their points total on multiple items and exceed their point balance.

There are two functions associated with script: **stripCommas()** and **checkBidAmount()**.

```
<script language="javascript">      function stripCommas(bidString){  
    var bString = bidString;  
    var newString = "";  
    var comma = ",";  
    if (bString.indexOf(comma)>=0){  
        for (var i=0, i<bString.length; i++)  
            if (bString.charAt(i) != comma)  
                break;  
        for (var j=bString.length-1; j>=0; j--)  
            if (bString.charAt(j) != comma)  
                break;  
        if(i==bString.length && j== -1)  
            newString="";  
        else {  
            if(!i || j!= bString.length-1){  
                newString = stripCommas(bString.substring(i,j+1));  
            }else  
                newString = bString.charAt(i)+  
                stripCommas(bString.substring(i+1,j+1)+ bString.charAt(j+1));  
        }  
    }  
    else{  
        newString = bString;  
    }  
}</script>
```

```

        }
        return newString;
    }
</script>

<script language="javascript">
    function checkBidAmount(){
        var ptsVal = 0;
        var bidAmount = stripCommas(document.BidForm.__bprice.value);
        var newBidAmount = parseInt(bidAmount);

        ptsVal = parseInt(GetCookie("z"));

        if(ptsVal == "null"){
            alert("Your point total is not available");
            return false;
        }
        if(ptsVal < newBidAmount){
            alert("Sorry, you do not have enough points to bid on this item!");
            return false;
        }
        return true;
    }
</script>

```

## Point Balance Retrieval

This script retrieves the customers Merrill Lynch point balance. It uses `getCookie()`, `getCookieVal()`, `setCookie()`, `getPoints()`.

```

<script language="javascript1.1"><!--
var argstr = location.search.substring(1, location.search.length);
var args = argstr.split('&');
var currentcookie = null;

function getCookieVal (offset) {
    var endstr = document.cookie.indexOf (";", offset);
    if (endstr == -1)
        endstr = document.cookie.length;
    return unescape(document.cookie.substring(offset, endstr));
}

function setCookie(value) {
    var cookie = null;

    if (value == null) {
        this.document.cookie = 'home=http://www.mlol.ml.com/; path=/';
    }
    else {
        for (var i = 0; i < args.length; i++) {
            if (args[i].indexOf('home') == 0) {
                value = unescape(args[i]);
                this.document.cookie = value + ';path=/';
            }
        }
    }
}

```

```

}

function GetCookie(name) {
    var arg = name + "=";
    var alen = arg.length;
    var clen = document.cookie.length;
    var i = 0;
    while (i < clen) {
        var j = i+ alen;
        if (document.cookie.substring(i, j) == arg)
            return getCookieVal (j);
        i = document.cookie.indexOf(" ", i) + 1;
        if (i == 0) break;
    }
    return null;
}

currentcookie = GetCookie("home");
setCookie(currentcookie);
//-->

</script>

<script language="javascript1.1"><!--
function getPoints(){
    var points = 0;

    points = GetCookie("z");
    if (points == null) {
        points = 'points';
    }
    document.forms[0].elements[0].value = points;
}
//-->
</script>
```

## Image Roll Overs

This script highlights images when mouse rolls over them.

```
<SCRIPT LANGUAGE = "JavaScript"><!--//

function imgKey(sourceOff, sourceOn){
    if(document.images){
        this.on = new Image()
        this.on.src = sourceOn
        this.off = new Image()
        this.off.src = sourceOff
    }
}

// Here's the array of image objects.
var imgList = new Array();

// Preload Rollover images
// imgList[name]=new imgKey(offImage,onImage)
```

```

//header images
imgList["mlol"] = new imgKey("/os/images/merrill_lynch/mla_sur_b1.gif",
"/os/images/merrill_lynch/mla_sur_r1.gif");
imgList["cent"] = new imgKey("/os/images/merrill_lynch/mla_sur_b2.gif",
"/os/images/merrill_lynch/mla_sur_r2.gif");
imgList["eshop"] = new imgKey("/os/images/merrill_lynch/mla_sur_b3.gif",
"/os/images/merrill_lynch/mla_sur_r3.gif");
imgList["ebus"] = new imgKey("/os/images/merrill_lynch/mla_sur_b4.gif",
"/os/images/merrill_lynch/mla_sur_r4.gif");
imgList["auct"] = new imgKey("/os/images/merrill_lynch/mla_sur_b5.gif",
"/os/images/merrill_lynch/mla_sur_r5.gif");

//subnav images
imgList["reg"] = new imgKey("/os/images/merrill_lynch/mla_sur_b6.gif",
"/os/images/merrill_lynch/mla_sur_r6.gif");
imgList["res"] = new imgKey("/os/images/merrill_lynch/mla_sur_b7.gif",
"/os/images/merrill_lynch/mla_sur_r7.gif");
imgList["watch"] = new imgKey("/os/images/merrill_lynch/mla_sur_b8.gif",
"/os/images/merrill_lynch/mla_sur_r8.gif");
imgList["stat"] = new imgKey("/os/images/merrill_lynch/mla_sur_b9.gif",
"/os/images/merrill_lynch/mla_sur_r9.gif");
imgList["me"] = new imgKey("/os/images/merrill_lynch/mla_sur_b10.gif",
"/os/images/merrill_lynch/mla_sur_r10.gif");
imgList["help"] = new imgKey("/os/images/merrill_lynch/mla_sur_b11.gif",
"/os/images/merrill_lynch/mla_sur_r11.gif");
imgList["us"] = new imgKey("/os/images/merrill_lynch/mla_sur_b12.gif",
"/os/images/merrill_lynch/mla_sur_r12.gif");
imgList["about"] = new imgKey("/os/images/merrill_lynch/mla_sur_b13.gif",
"/os/images/merrill_lynch/mla_sur_r13.gif");
imgList["sign"] = new imgKey("/os/images/merrill_lynch/mla_sur_b14.gif",
"/os/images/merrill_lynch/mla_sur_r14.gif");
imgList["visa"] = new imgKey("/os/images/merrill_lynch/mla_sur_b15.gif",
"/os/images/merrill_lynch/mla_sur_r15.gif");

//footer images
imgList["mlol2"] = new imgKey("/os/images/merrill_lynch/mla_sur_b1.gif",
"/os/images/merrill_lynch/mla_sur_r1.gif");
imgList["cent2"] = new imgKey("/os/images/merrill_lynch/mla_sur_b2.gif",
"/os/images/merrill_lynch/mla_sur_r2.gif");
imgList["eshop2"] = new imgKey("/os/images/merrill_lynch/mla_sur_b3.gif",
"/os/images/merrill_lynch/mla_sur_r3.gif");
imgList["ebus2"] = new imgKey("/os/images/merrill_lynch/mla_sur_b4.gif",
"/os/images/merrill_lynch/mla_sur_r4.gif");
imgList["auct2"] = new imgKey("/os/images/merrill_lynch/mla_sur_b5.gif",
"/os/images/merrill_lynch/mla_sur_r5.gif");

//This function swaps in the "on" image. It should be called in an onMouseover event handler
function imgOn (imgName)
{
    if(document.images)
    {
        document[imgName].src = imgList[imgName].on.src;
    }
}

// This function swaps in the "off" image. It should be called in an onMouseout event handler

```

```

function imgOff(imgName)
{
if(document.images)
{
    document[imgName].src = imgList[imgName].off.src;
}
}

//-->
</script>

```

## Banner Ad

Displays banner ads at top of every auction page. This is a client provided script that was modified by IBM. The “ **banner = /os/banners/...**” assignment statement was modified to point to the “**os**” virtual directory.

This script has two functions: **setupTopBanners()** and **displayTopBanner()**.

```
<SCRIPT LANGUAGE="JavaScript">
```

```
<!-- Begin
```

```

function setupTopBanners(){
    var numberOfBanners = 34;
    var now = new Date()
    var sec = now.getSeconds()
    var ad = sec % numberOfBanners;

    ad = (Math.round(Math.random() * numberOfBanners) + 1);

    if (ad==1) {
        txt="";
        url="http://www.plan.ml.com/siteadv/aips003z.html";
        alt="Make Time Work for You With a Long-Term Investment Strategy";
        banner="/os/banners/aips003h.gif";
        width="600";
        height="35";
    }

    if (ad==2) {
        txt="";
        url="http://www.plan.ml.com/siteadv/aips004z.html";
        alt="Seek Your Goals with AIPs";
        banner="/os/banners/aips004h.gif";
        width="600";
        height="35";
    }

    if (ad==3) {
        txt="";
        url="http://www.plan.ml.com/siteadv/mfa001z.html";
        alt="Want Relief from Making Mutual Fund Investment Decisions?";
        banner="/os/banners/mfa001h.gif";
        width="600";
    }
}
```

```

height="35";
}

if (ad==4) {
txt="";
url="http://www.plan.ml.com/siteadv/mfa005z.html";
alt="Did You Know Asset Allocation of Mutual Funds Can Help Lower Risk?";
banner="/os/banners/mfa005h.gif";
width="600";
height="35";
}

if (ad==5) {
txt="";
url="http://www.plan.ml.com/siteadv/mfa008z.html";
alt="Market Jitters? Rely on Professional Portfolio Management for a Competitive Advisory
Free";
banner="/os/banners/mfa008h.gif";
width="600";
height="35";
}

if (ad==6) {
txt="";
url="http://www.plan.ml.com/siteadv/mfas002z.html";
alt="Want to Receive Mutual Fund Advice, While Retaining Control of Investment Decisions?";
banner="/os/banners/mfas002h.gif";
width="600";
height="35";
}

if (ad==7) {
txt="";
url="http://www.plan.ml.com/siteadv/mfas004z.html";
alt="Want Customized Mutual Fund Recommendations?";
banner="/os/banners/mfas004h.gif";
width="600";
height="35";
}

if (ad==8) {
txt="";
url="http://www.plan.ml.com/siteadv/mfas005z.html";
alt="Want Access to Nearly 2,000 Funds Funds from Over 80 Fund Families?";
banner="/os/banners/mfas005h.gif";
width="600";
height="35";
}

if (ad==9) {
txt="";
url="http://www.plan.ml.com/siteadv/mlam037z.html";
alt="Europe is Changing. Maybe Your Investment Portfolio Should, Too.";
banner="/os/banners/mlam037h.gif";
width="600";
height="35";
}

```

```

}

if (ad==20) {
txt="";
url="http://www.plan.ml.com/siteadv/mlam038z.html";
alt="Want Investment Opportunities That are Out of This World? Consider Mercury.";
banner="/os/banners/mlam038h.gif";
width="600";
height="35";
}

if (ad==10) {
txt="";
url="http://www.plan.ml.com/siteadv/mlam038z.html";
alt="Want Investment Opportunities That are Out of This World? Consider Mercury.";
banner="/os/banners/mlam038h.gif";
width="600";
height="35";
}

if (ad==11) {
txt="";
url="http://www.plan.ml.com/siteadv/mlam039z.html";
alt="Think Globally... Act Now";
banner="/os/banners/mlam039h.gif";
width="600";
height="35";
}

if (ad==12) {
txt="";
url="http://www.plan.ml.com/siteadv/mlam040z.html";
alt="Think the Best Investment Opportunities Are in the U.S.? You Might Want to
Think Again.";
banner="/os/banners/mlam040h.gif";
width="600";
height="35";
}

if (ad==13) {
txt="";
url="http://www.plan.ml.com/siteadv/mlam041z.html";
alt="Some of the World's Leading Companies Trust Their Assets to Us. Why Wouldn't You?";
banner="/os/banners/mlam041h.gif";
width="600";
height="35";
}

if (ad==14) {
txt="";
url="http://www.plan.ml.com/siteadv/mlam042z.html";
alt="Expand Your Investment Horizons";
}

```

```

banner="/os/banners/mlam042h.gif";
width="600";
height="35";
}

if(ad==15) {
txt="";
url="http://www.plan.ml.com/siteadv/mlig008z.html";
alt="Maximize Retirement Savings While Minimizing Taxes with RateMax(SM)";
banner="/os/banners/mlig008h.gif";
width="600";
height="35";
}

if(ad==16) {
txt="";
url="http://www.plan.ml.com/siteadv/mlig014z.html";
alt="The Tax Man Cometh";
banner="/os/banners/mlig014h.gif";
width="600";
height="35";
}

if(ad==17) {
txt="";
url="http://www.plan.ml.com/siteadv/mlam004z.html";
alt="With Daily Account Updates, Portfolio Gracking Has Never Been Easier";
banner="/os/banners/mlol004h.gif";
width="600";
height="35";
}

if(ad==18) {
txt="";
url="http://www.plan.ml.com/siteadv/mlam005z.html";
alt="With 24-Hour Account Updates, Portfolio Tracking Has Never Been Easier";
banner="/os/banners/mlol005h.gif";
width="600";
height="35";
}

if(ad==19) {
txt="";
url="http://www.plan.ml.com/siteadv/mlam006z.html";
alt="24-Hour Account Access";
banner="/os/banners/mlol006h.gif";
width="600";
height="35";
}

if(ad==20) {
txt="";
url="http://www.plan.ml.com/siteadv/mlol007z.html";
alt="Is Your Portfolio On Track?";
banner="/os/banners/mlol007h.gif";
}

```

```

width="600";
height="35";
}

if(ad==21) {
txt="";
url="http://www.plan.ml.com/siteadv/mltr005z.html";
alt="Merrill Lynch Trust Services Available Nationwide";
banner="/os/banners/mltr005h.gif";
width="600";
height="35";
}

if(ad==22) {
txt="";
url="http://www.plan.ml.com/siteadv/ppg002z.html";
alt="Private Portfolio Group Individualized Portfolio Management Group for a Complex World";
banner="/os/banners/ppg002h.gif";
width="600";
height="35";
}

if(ad==23) {
txt="";
url="http://www.plan.ml.com/siteadv/ppg004z.html";
alt="Private Portfolio Group Creates Tailored Solutions for Your Investment Needs";
banner="/os/banners/ppg004h.gif";
width="600";
height="35";
}

if(ad==24) {
txt="";
url="http://www.plan.ml.com/siteadv/ppg008z.html";
alt="Do You Know the Benefits of an Individually Managed Portfolio?";
banner="/os/banners/ppg008h.gif";
width="600";
height="35";
}

if(ad==25) {
txt="";
url="http://www.plan.ml.com/siteadv/ppg010z.html";
alt="Does Your Idea of Enjoying Retirement Include Managing Your Investments?";
banner="/os/banners/ppg010h.gif";
width="600";
height="35";
}

if(ad==26) {
txt="";

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url="http://www.plan.ml.com/siteadv/ppg012z.html";
alt="More Than 20 Years' Experience Managing Client Assets";
banner="/os/banners/ppg012h.gif";
width="600";
height="35";
}

if (ad==27) {
txt="";
url="http://www.plan.ml.com/siteadv/rpa001z.html";
alt="Want Professional Management of Your Portfolio of Retirement Plus Funds?";
banner="/os/banners/rpa001h.gif";
width="600";
height="35";
}

if (ad==28) {
txt="";
url="http://www.plan.ml.com/siteadv/rpa003z.html";
alt="Want a Disciplined Approach to Help Achieve Your Long-Term Goals in Retirement Plus?";
banner="/os/banners/rpa003h.gif";
width="600";
height="35";
}

if (ad==29) {
txt="";
url="http://www.plan.ml.com/siteadv/wcma040z.html";
alt="Move Money Electronically - FREE. WCMA Funds Transfer Service";
banner="/os/banners/wcma040h.gif";
width="600";
height="35";
}

if (ad==30) {
txt="";
url="http://www.plan.ml.com/siteadv/wcma049z.html";
alt="Optimize Your Business's Cash Flow with a WCMA Line of Credit.";
banner="/os/banners/wcma049h.gif";
width="600";
height="35";
}

if (ad==31) {
txt="";
url="http://www.plan.ml.com/siteadv/wcma051z.html";
alt="Maximize Your Business's Credit Options";
banner="/os/banners/wcma051h.gif";
width="600";
height="35";
}

```

```

        }

    }

}

if (ad==32) {
txt="";
url="/mlol/main/index.asp?Action=Global";
alt="Merrill Lynch Global Investor Network Exclusive Daily and Global News";
banner="/os/banners/ginbanner.gif";
width="600";
height="35";
}

if (ad==33) {
txt="";
url="/mlol/main/index.asp?Action=Global";
alt="Merrill Lynch Global Investor Network Exclusive Daily and Global News";
banner="/os/banners/10animsize.gif";
width="600";
height="35";
}

if (ad==34) {
txt="";
url="/mlol/main/index.asp?Action=Global";
alt="Merrill Lynch Global Investor Network Exclusive Daily and Global News";
banner="/os/banners/3animsize.gif";
width="600";
height="35";
}

if (ad==35) {
txt="";
url="/mlol/main/index.asp?Action=Global";
alt="Merrill Lynch Global Investor Network Exclusive Daily and Global News";
banner="/os/banners/8animfinal.gif";
width="600";
height="35";
}

function displayTopBanner(){
setupTopBanners()
document.write('<center>');
document.write('<a href=' + url + '" target=_top">');
document.write('<img src=' + banner + '" width=')
document.write(width + ' height=' + height + '>');
document.write('alt=' + alt + '" border=0><br>');
document.write('<small>' + txt + '</small></a>');
document.write('</center>');
}

```

## JavaScript Functions

Function Name	Expects(parameters)	Returns	Description
CheckBidAmount()	none	Boolean	Prevents the user from bidding an amount greater than their current point balance.
CheckHandle()	form	Boolean	Returns true if handle does not contain curse word and is not empty, alert box and false otherwise.
DisplayTopBanner()			Displays banner at top of every auction page.
GetCookie()	string	Cookie value	Calls getCookieVal() to retrieve cookie information.
GetCookieVal()	integer	Cookie value	Retrieves cookie information
GetPoints()	none		Retrieves points balance and sets form field to current points
ImageKey()	string, string		Used to pre-load images into ImageList[] array
ImageOff()	string		Causes image to highlight when mouse is over it
ImgaeOn()	string		Returns image to normal when mouse moves off image
isEmpty()	Input string	Boolean	Returns true or false depending on if string is empty or not.
Launch()	New window Url, New window name, New window features, Original window Name	New window	Launches a new browser window with description of "handle" found in the Auction Guide page.
LaunchRemote()	None	Launched window	Call "launch()" to return new browser window.
SetCookie()	string		Sets cookie value
SetupTopBanner()	None		Sets up banner ads for random display
StripCommas()	Input string	String with no commas	Removes commas from strings in order to check bid amount.

## Modifications to OpenSite Templates

# Merrill Lynch Online Auction Template Modifications

## Introduction

IBM has contracted with Merrill Lynch to incorporate auction functionality into the existing Merrill Lynch Signature Visa Mall infrastructure by installing, configuring and customizing the OpenSite auction software on the Signature servers. This document provides a summary of the changes made to the OpenSite software to incorporate this functionality. These changes include the modification of existing OpenSite templates as well as the creation of static HTML and JavaScript files. This document also provides a description of changes made to the OpenSite administration tool and how to edit the customer database.

## OpenSite Template Modifications

The OpenSite templates were customized utilizing HTML and JavaScript technologies and can be found in the “wwwroot/oshome” directory. These are dynamic files that generate static “.stm” files when edited and published using the OpenSite Template Editor. The “.stm” files should not be modified, as they would be overwritten every time a change is made to an “.htx” file and that “.htx” file is published. More information on modifying templates can be found in the “*Introduction to Customizing Templates*” section of the OpenSite user guide chapter 5 “The Administration Index”. The following templates were modified:

- Acknowledge\_Auc.htx
- Auction\_watch.htx
- Buyers\_status\_output.htx
- Category\_Auc.htx
- Category\_AucNew.htx
- Contact\_page.htx
- Include\_header.htx
- Include\_footer.htx
- Include\_home\_message.htx
- Info\_page.htx
- Item\_form\_Auc.htx
- Osauction.htx
- Registration\_form.htx
- Send\_password.htx
- View\_customer\_bidding\_history.htx
- Winners\_auction.htx

## Static Files

Static files were created for displaying client content and providing meaningful error messages for the auction site. All of these files must be updated whenever changes are made to the include header (include\_header.htx) and footer (include\_footer.htx) files. The “info\_window.html” file contains the same content as the “about\_us.html” file; therefore, whenever changes are made to the “about\_us.html” file this file must be updated as well. These static files are located in the “os” directory and are as follows:

- About\_us.html
- Info\_window.html      Must be updated whenever changes are made to “about\_us.html”
- Auth\_error.html
- Bid\_redirect.html
- Login\_error.html
- Must\_register.html
- Points\_error.html

## Administration Templates

The category hyperlink in the Administrative index was removed to prevent the addition or deletion of categories. There is only one category “Current Items” and this category holds all auction items. To create

test items, the administrator may assign these items to the “Test” category provided by the software. The file modified for this change is the “administration\_index\_left\_frame.htm” and is located in the “oshome/administration” directory.

## JavaScripts

Several JavaScript functions were incorporated into the auction site templates to provide image rollover effects and form validation. These scripts are included in several template files and are also located in two JavaScript files: “include\_mloljscript.htm” and “include\_regiscript.js”. These scripts are in the “wwwroot/os” directory and the templates that contain them are listed below:

- Include\_header.htm ---Points Retrieval, Banner Ad, Image Roll Overs
- Include\_footer.htm ---Points Retrieval
- Item\_form\_Auc.htm ---Points Balance Check
- Registration\_form.htm ---Check Handle, Handle Pop up

A Brief description of these scripts is provided in the table below.

JavaScripts	Description
Points Retrieval	Retrieves the customer’s point balance from Merrill Lynch and populates the ptsVal edit box with that value. If the point value is returned “null” the text box is populated with the text “points”.
Points Balance Check	Restricts the user from placing a bid that is greater than his/her points balance.
Check Handle	Screens handle entry on registration form for curse words.
Handle Pop up	Launches pop up window when user clicks on “Pick a handle” text on registration form.
Banner Ad	Client provided this script.
Image Roll Overs	Client provided this script.

## Error Templates

OpenSite contains three error message templates. While the text in these files can be modified, the actual error that is generated by the template cannot. According to OpenSite, this error message is generated by their executed code and “cannot” be modified. The three error files are listed below and they are located in the “oshome” directory:

- Error\_message\_bid.htm
- Error\_message\_general.htm
- Error\_outbid\_by\_autobid.htm

## Mail Templates

OpenSite automatically generates email messages when the customer performs certain actions. These actions include: placing a bid, a customer being outbid, a customer winning an auction item, and a customer registering to the site. All of these email messages are sent immediately except for the winning bidder email “mail\_buyer\_notices.txt”. This email must be sent utilizing the invoicing function in the Administration Tool. To obtain more information on this procedure, please refer to chapter 5 in the OpenSite user’s guide. All other emails have been customized to go to the auction administrator. The following is list of the email that were customized for the Merrill Lynch Online Auction:

- Mail\_buyer\_notices.txt
- Mail\_outbid\_notice.txt
- Mail\_welcome\_buyers.txt
- Mail\_acknowledge\_auc.txt

## **Images**

Images for the auction site are located in three directories. The images used to customize the auction software are located in the “os/images/merrill\_lynch” directory. The Banner Ad images are located in the “os” directory and all the OpenSite images are in the “os/images/styles/modernblue” directory.

## **Style Sheet**

Can be found in the “wwwroot/os/images/Merrill\_lynch” directory.

- Basic.css

## **Customer Database File**

OpenSite does not provide a way to delete existing customers from the site. The only way this can be achieved is by manually editing the Customer database file “cust.txt” located in the “os/home/data/central” directory. This file is very sensitive and should be modified carefully. To delete a customer simply find the customers handle or id number and the deleted the customer’s entire record. Do Not attempt to modify part of the record as this may screw the whole database up.

## **When and How to modify the Customer Database**

- While attempting to perform an administrative function the administrator receives an error message stating “Sorry, The encryption key is null and can not be encrypted”. This means that one of the customers have a null “cmaid” or “password”. The admin must edit the “cust.txt” file and search for all customers who have recently registered, checking for null or blank “cmaid” or “password” values. All records containing these null values must be deleted from the database and the customers must be notified to re-register.
- The Administrator needs to delete a customer from the database.

## ***Merrill Lynch Signature and Premium Technical Functionality***

Please refer to the “Merrill Lynch Signature Technical Design Document” or the “Merrill Lynch Premium Technical Design Document” for functionality that is linked to through Merrill Lynch Auctions, but is technical functionality not included in the scope of the Merrill Lynch Auctions.